351 N35 N35 N30ex 1979 NIC

# MINERALOGICAL ABSTRACTS

SS

Volume 30 - Index 1979

> Principal Editor R. A. HOWIE

U.I.C SEP LIB

Indexers

A. M. CLARK, G. S. BEARNE, and C. E. M. COLLINGBORN

U.I.C.C.
SEP 5 1980.

PUBLISHED JOINTLY BY
THE MINERALOGICAL SOCIETY OF GREAT BRITAIN AND THE MINERALOGICAL SOCIETY OF AMERICA
LONDON 1980

### MINERALOGICAL ABSTRACTS

#### COMMITTEE OF MANAGEMENT

Mineralogical Society of Great Britain

R. A. Howie, President

D. R. C. Kempe, Secretary

P. S. Rogers, Treasurer

A. R. Woolley, Publications Manager

Mineralogical Society of America
DAVID R. WONES, President
L. W. FINGER, Secretary
MALCOLM ROSS, Treasurer

#### INDEX OF AUTHORS

Anderson, M. E., 79-1431

Aaboe, E., 79-2702 Aario, R., 79-2170 Aarnisalo, J., 79-2160 Abadian, H., 79-1251 Abbey, S., 79-2618, 2632, 3204 Abbott, R. N., Jr., 79-3743 Abbotts, I. L., 79-2978 Abdel-Baset, Z., 79-3858 Abdel-Kader, F. H., 79-82 Abdel Rehim, A. M., 79-3455 Abe, H., 79-4013 Abeidu, A. M., 79-4335 Abel, J. 79-314 Abelson, P. H., 79-71 (15) Abo-El-Enein, S. A. 79-2425 Abou-Khadrah, A. M., 79-1798 Abraham, K., 79-3037 Abreu, A. S., 79-1687 Absar, A., 79-3249 (14) Abu-Eid, R. M., 79-294, 1590 Abu-moustafa, A., 79-805 (2) Abu Zeid, M., 79-2517 Acharyya, S. K., 79-3248 (11) Ackermand, D., 79-927 Ackermann, R. J., 79-320 Adachi, A., 79-1656 Adalla, A. Y., 79-4251 Adamchuk, I. P., 79-1426 Adamkovičová, K., 79-2377 Adams, C. J., 79-1010 Adams, F., 79-1082 Adams, J. B., 79-583, 2666 Adams, J. M., 79-2029 Addy, S. K., 79-655 Adler, I., 79-573, 575, 2663 Adlhart, W., 79-3349 (65, 66) Afanas'yev, G. D., 79-2485 Afonina, G. G., 79-696, 2823, 3349 (78) 79-1056 Aftalion, M., (3.6),3150-3152 Agiorgitis, G., 79-1382, 2481, 3788 Aggarwal, H. R., 79-3946 Agrawal, D. P., 79-3165 Agrawal, J. K., 79-2651 Aguirre, L., 79-936 Ahern, J. L., 79-1921 Ahlberg, L., 79-596 Ahlin, S., 79-4006 Ahlrichs, J. L., 79-3297 Ahmad, S., 79-48, 724 Ahmad, S. N., 79-490 Ahmed, M., 79-3752, 4353 Ahmed, Z., 79-728, 795, 2005 Ahrens, L. H., 79-2638 Ahrens, T. J., 79-3936, 3941 Aidagulov, R. R., 79-3349 (67) Aiello, R., 79-2411, 3756 Aikala, O., 79-3349 (21) Aikas, O., 79-1476 Aita, S., 79-2253 Aitken, A. M., 79-2219 Aizenshtat, Z., 79-2542 Akamatsu, S., 79-400 Akao, M., 79-203, 204, 2414 Akaogi, M., 79-1863, 3398 Akella, J., 79-341, 354, 518, Akhylediana, R. A., 79-2828

Aki, K., 79-2966 Akimoto, S., 79-138, 1863 Akizuki, M., 79-406, 1608, 2099, 4329 Alaerts, L., 79-3986 Alapieti, T., 79-819 Al-Aasm, I. S., 79-2519 Alasti, H., 79-3666 Albarède, F., 79-11 Albee, A. L., 79-1530, 2567, 2704, 3537 Alberti, A., 79-3352, 3895, 4060, 4196 Albrecht, W., 79-410 Alderton, D. H. M., 79-1150, 1817 Aldous, R. T. H., 79-1979 Aldridge, L. P., 79-2383, 2383a, 3722 Aleksiev, B., 79-935 Alexander, E. C., Jr., 79-3978 Alexandersson, E. T., 79-1788 Alexandrowicz, S., 79-4067 Ali, M. Z., 79-3916, 3929, 3953 Alietti, A., 79-3299 Al-Jassar, S. E., 79-2582 Al-Kufaishi, F. A. M., 79-2519, 3896 Allchurch, P. D., 79-932 Allègre, C. J., 79-417, 2001, 2502, 3990, 4194 Allegru, G., 79-1099 Allen, B. P., 79-1050 Allen, J. C., 79-2389 Allen, P. M., 79-1663, 2173 Allen, R. O., 79-3901 Aller, R. O., Jr., 79-3969 Aller, R. C., 79-3855 Allison, I., 79-1191, 3027 Allred, D. D., 79-704 Allsop, H. L., 79-2901 (13) Alm, O., 79-3600 Altherr, R., 79-1755 Al-Turki, K. I., 79-1700 Alvarez, R., 79-601 Alyea, F. N., 79-71 (4) Ambler, E. P., 79-1820 Ambrose, G. J., 79-503 Ambrose, W. R., 79-862 Amelinckx, S., 79-1124 Amer, S. A., 79-2518 Amitin, E. B., 79-250 Åmli, R., 79-823 Amossé, J., 79-1070 (IV. 1), 2341 Amouri, M., 79-1205 Amstutz, G. C., 79-221, 420, Amthauer, G., 79-3349 (25) Anagnostopoulos, N. R. C., 79-2007 (1) Anagnostopoulou-Konsta, 79-2007 (1) Anders, E., 79-527, 2735, 3986 Anderson, D. E., 79-474, 1589, 2755 Anderson, D. L., 79-1514 Anderson, J. B., 79-213 Anderson, J. L., 79-1735 Anderson, J. W., 79-2013 (1.1) Anderson, L. O., 79-2431

Anderson, O. L., 79-1337 Anderson, P., 79-2335 Anderson, P. A. M., 79-1333, 2300 Anderson, R. E., 79-1739 Anderson, R. N., 79-1918, 1924, 3077 Anderson, S. M., 79-387 Anderson, T. F., 79-3819 Anderson, W. L., 79-2014 (1.7) Andrade, A. A. Soares de., 79 3817 Andrawes, F., 79-1493 Andrawes, F. F., 79-3215 Andre, C. G., 79-573, 575, 2663 Andreeva, L., 79-1070 (I.4) Andrew, C. J., 79-1198 Andrews, J. T., 79-71 (10) Andrews, R. G., 79-2014 (5.3) Andriambololona, R., 79-3444 Andritzky, G., 79-2205 Angel, B. R., 79-2052 Anhaeusser, C. R., 79-4283 Anjanappa, K., 79-3249 (20) Anné, M., 79-979 Annels, A. E., 79-2209 Annersten, H., 79-3381 Ansberg, Yu. V., 79-2520 Ansell, G. B., 79-3349 (34) Anselmo, J. C., 79-3937 Antanovich, A. A., 79-262 Antipin, M. Yu., 79-2137 Antweiler, R. C., 79-2527 Anvi, R., 79-2013 (1.4) Aoki, K.-I., 79-12 Aoki, M., 79-2014 (7.5), 4013 Apostolov, D., 79-307, 651 Apostolov, D. A., 79-2211 Appel, P. W. U., 79-2509, 3851 Appelo, C. A. J., 79-1111, 3377 Appleman, D. E., 79-395, 769, 1118, 4081 Appleman, M. H., 79-4081 Appleton, B. R., 79-704 Aquilano, D., 79-3336, 3337 Aragon, R., 79-3233 (III.3) Arai, O., 79-4000 Araki, T., 79-146, 3361, 3417 Araújo, R. J., 79-3160 Archer, A. R., 79-1190 Archer, R., 79-2991 Archibald, D. A., 79-18 Arculus, R. J., 79-3233 (IV.1), 4171 Argiolas, R., 79-3676, 3678 Arias, Vasallo, P., 79-49 Arkai, P., 79-4308 Arkhipov, S. V., 79-3130 Armanson, H., 79-423 Armbruster, Th., 79-3394 Armbrustmacher, T. J., 79-4210 Armin, T., 79-2158 (8) Armitage, T. M., 79-887 Armstrong, P. B., 79-1259 Armstrong, R. L., 79-3175, 3176 Arnaudov, V., 79-455 Arndt, N. T., 79-466, 852, 1413 Arnold, J. R., 79-577, 594 Arnold, P. W., 79-1059 (5)

Arnórsson, S., 79-1459 Arnt, N. T., 79-290 Arora, H. S., 79-3269 Arslan, A. I., 79-2482, 3818 Arth, J. G., 79-451, 3231 (3, 12) Artique, G., 79-1888 Aruscavage, P., 79-3205 Arvidson, R. E., 79-3943 Asadov, Yu. G., 79-2133 Ashby, D. A., 79-2014 (3.8) Ashley, G. M., 79-3549 Ashraf, M., 79-112, 113, 840, 883, 903 Aslanijan, S., 79-307 Aslanjan, S., 79-945 Aslanjan, T. A., 79-3349 (12) Asomoza, P. M., 79-85 Atkin, B. P., 79-1048, 1970 Atkin, D., 79-2874, 2885 Atwater, T., 79-1919 Atwood, D. K., 79-2548 Aubague, M., 79-3451 Aubert, M., 79-3468 Aubut, A., 79-234 Audley-Charles, M. G., 79-4153 Augustithis, S. S., 79-69, 69 (1), 2007, 2007 (2), 3777 Auleytner, J., 79-3349 (62) Ault, C. H., 79-3540 Austen, C. E., 79-52 Austerman, S. B., 79-2095 Autio, L. K., 79-3734 Autran, A., 79-771 (21) Avdonin, A. S., 79-1384 Avias, J., 79-2197 Awan, A., 79-795 Axon, H. J., 79-2711, 2721 Aye, F., 79-1174, 2178 Ayling, G. M., 79-1249 Azzaro, E., 79-4312, 4313 Baadsgaard, H., 79-3172

Baccus, J., 79-2449 Bach, R. W., 79-2289 Bachinski, S. W., 79-2497 Bachurin, A. K., 79-2816 Bäcker, H., 79-3481 Bäckström, G., 79-2335 Bacon, J. R., 79-1248, 3324 Bacon, W. R., 79-1192 Bada, J. L., 79-1002, 1416, 3146 Baddenhausen, H., 79-1531 Badham, J. P. N., 79-2943 Baffi, F., 79-1992 Bagdasarjan, G. P., 79-3157 Bahat, D., 79-2817 Bahranowski, K., 79-3285 Bailey, D. K., 79-3214, 3655, 3656 Bailey, E. H., 79-3479 Bailey, J. C., 79-3828 Bain, D. C., 79-2014 (1.6) Bain, J. A., 79-2014 (5.2) Baird, A. K., 79-1564, 1565 Baird, T., 79-2132 Bak, J., 79-3349 (62) Baker, E. M., 79-1217 Baker, J., 79-4116 Baker, M. C. W., 79-1031

Babčan, J., 79-3587

Babitsyn, P. K., 79-2816

Baker, P. E., 79-2503, 2952 Baker, W. E., 79-1385 Balaes, G. E. E., 79-3221 Balasubramaniam, K. S., 79-2007 (3) Baldock, J. W., 79-2192 Baldwin, C. T., 79-1056 (3.1) Balitsky, V. S., 79-369 Balko, V., 79-377 Balkwill, H. R., 79-4403 Ball, A., 79-954 Ballard, R. D., 79-2946 Ballard, R. R. B., 79-1419 Balmer, R. T., 79-3125 Baltakmens, T., 79-2599 Baltatzis, E., 79-3028 Bambauer, H. U., 79-3236 (18) Bambauer, H. U., 79-3230 Banas, M., 79-2874 Bancroft, G. M., 79-2383, 2383a, 3224, 3722 Bando, Y., 79-2126 Banerjee, B., 79-3536 Banerjee, D. M., 79-1440 Banerjee, R. K., 79-3665 Banerjee, S. K., 79-397, 959, 2977, 3915 Banholzer, G. S., Jr., 79-46 Bank, H., 79-388, 397, 398, 1592, 2427, 2433, 2435, 2436, 2439 Banks, N. G., 79-1028 Banks, P.O., 79-2946 Banks, R. J., 79-1915, 2900 Bankwitz, R., 79-1070 (III.1) Banno, S., 79-2379 Bansal, B., 79-2703 Bansal, B. M., 79-1492 Bansal, O. P., 79-3296 Bapat, V., N., 79-953, 2598 Baqri, S. R. H., 79-1238, 1239 Baran, J., 79-1070 (III.2) Barański, L., 79-3872 Barber, A. J., 79-1776, 4135, 4153 Barber, D. J., 79-2678 Barbier, J., 79-1173 Barbieri, M., 79-1463, 2514 Barbosa, C. P., 79-2833 Barcelona, M. J., 79-2548 Bardossy, G., 79-1629, 3291 Bárdossy, Gy., 79-1233, 2217 Barghoorn, E. S., 79-1906 Bariand, P., 79-2438 Barker, D. S., 79-374, 674, 1692, 4216 Barker, F., 79-451, 487, 3231 (1, 12, 13, 17, 18) Barkovskaya, M. G., 79-2999 Barley, M. E., 79-4268 Barnes, H. L., 79-2879 Barnicoat, A., 79-4296 Baron, R. L., 79-600, 2650, 3953 Barondeau, B., 79-3799 79-985. Barraclough, D. R., 3078 Barrett, R. B., 79-2020 Barricelli, N. A., 79-618 Barron, B. J., 79-1307 Barron, L. M., 79-1307 Barry, R. G., 79-71 (10) Bars, O., 79-206 Barsukov, V. L., 79-1070 (IV.9), 3933, 3934 Bart, H. A., 79-3014

Bartl, H., 79-3416 Barton, J. M., Jr., 79-2901 (6, Barton, M., 79-3654 Bartov, Y., 79-1007 Barwood, H., 79-3117 Baryshnikova, G. V., 79-3997 Basett, A. M., 79-3248 (8) Basilevsky, A. T., 79-3931, 3974 Baskina, V. A., 79-1070 (I.1) Basova, G. V., 79-3517 Bassett, W. A., 79-264, 1862, 2413, 3060, 3236 (14) Bassi, I. W., 79-1099 Basso, R., 79-4004 Bastien-Thiry, H., 79-3436 Basu, A., 79-2672, 2687, 3910, 3952 Basu, A. R., 79-414, 1394, 3233 (V.4)Bateson, J. H., 79-4167 Batiashvili, T. V., 79-2828 Batiza, R., 79-1781, 1855, 3833 Batory, D. M., 79-4387 Battey, M. H., 79-2764 Battiwala, H. K., 79-4284 Baud, G., 79-326 Baudrocco-Gritti, C., 79-1041 Bauer, F., 79-1898 Baum, H., 79-1576 Baumann, F. W., 79-1224 Baumann, L., 79-741, 1070 (I.2) Baumer, A., 79-3676, 3678 Baur, H., 79-3955 Baur, W. H., 79-168, 3349 (38), Bautsch, H.-J., 79-182, 671 Bavarez, M., 79-3346 Baverez, M., 79-2044 Bavinton, O. A., 79-416, 2524 Baxi, D. R., 79-2273 Bayer, G., 79-3341 Bayer, M., 79-4145 Baykova, V. S., 79-2825 Bayliss, P., 79-891, 894, 2751 Bazarov, L. Sh., 79-2827 Bazhenova, G. N., 79-2564 Bazheyev, Ye[E]. D., 79-1209 Bea Varredo, F., 79-49 Beach, A., 79-1444 Beamish, D., 79-2900 Beard, J. H., 79-3186 Beaujour, A., 79-2177 Beaulne, J. M., 79-232 Beavis, F. C., 79-1470 Beavis, J. C., 79-1470 Becherer, G., 79-3349 (53) Bechstädt, Th., 79-2183 Beck, B. F., 79-1813 Becker, A., 79-1487 Becker, Ch., 79-3349 (75) Becker, P., 79-3349 (16) Becker, R., 79-2481, 3788 Becker, R. H., 79-3956 Beckinsale, R. D., 79-452, 1943, 3154, 3167, 3786 Bedarida, F., 79-3564 Beer, K. E., 79-1376, 3232 (6) Beers, W. F., 79-3315 Beeson, M. H., 79-864, 4227 Beeson, R., 79-910, 2158 (12) Begemann, F., 79-2714 Begg, C., 79-3723 Begizov, V. D., 4099

Belikova, G. I., 79-2462 Bell, J. D., 79-1751 Bell, K., 79-26, 3169
Bell, P. M., 79-150, 151, 279, 304, 337-339, 350, 509, 514-517, 519, 521, 523, 585, 702, 2683, 3560, 3561, 3573, 3659, 3712, 3713, 4344, 4358 Bell, R. T., 79-1060 (D.2) 79-2094, Belokoneva, E. L., 2130, 2416, 3349 (39) Belov, N. V., 79-2093, 2094, 2102, 2103, 2120, 2123, 2128–2130, 2133, 2143– 2145, 3349 (30, 39), 3382, 3411, 3419, 3426 Belyustin, A. V., 79-2357 Bence, A. E., 79-1293, 1500, 1523, 1562, 2661, 2693, 2788, 2797 Bencini, A., 79-3212 Bender, J. F., 79-1293 Bengus, V. Z., 79-3349 (63) Benhamou, G., 79-3577, 3647, Beninger, L. K., 79-2532 Benjamin, T. M., 79-286 Bennell, M. R., 79-1215 Bennett, C. L., 79-3 Bennett, J. D., 79-4151 Benninger, L. K., 79-3855 Bentley, S. P., 79-1987 Beran, A., 79-1971 Berdesinski, W., 79-398, 2435 Berezina, L. A., 79-1054 Berezkin, V. I., 79-2565 Berezovskaya, V. V., 79-4084 Berger, A. R., 79-3169 Berger, E., 79-2920 Berger, H., 79-166 Berger, M. G., 79-2195 Berger, W. H., 79-1786 Berkley, J. L., 79-3985 Berman, E., 79-2013 (2.4) Berman, I. B., 79-3781 Berman, R. M., 79-1039 Bernard, A., 79-1478 Bernard, A. J., 79-1161 Bernatowicz, T., 79-3980 Berner, R. A., 79-473 Bernstein, L. R., 79-4340 Berrangé, J. P., 79-4168 Berrow, M. L., 79-1085, 2055, 3324 Berry, A. L., 79-3177 Berry, L. G., 79-4389 Berry, W. B. N., 79-805 (10) Bertaut, E. F., 79-3333 Berthelsen, A., 79-3248 (13) Berthelsen, C. R., 79-786 Bertin, E. P., 79-1055 Bertin, J., 79-3482 Bertine, K. K., 79-2538 Bertolani, M., 79-4314 Bertrand, J., 79-1414 Bertrand, J. M. L., 79-1667 Bertraneu, J., 79-2175 Berzsmertnaya, M. S., 79-4112 Beske-Diehl, S., 79-2977 Beskin, S. M., 79-4127 Besse, J. P., 79-326 Besset, F., 79-2200 Besson, G., 79-2014 (1.4) Besson, M., 79-3445

Best, N. F., 79-3705-3707, 3735, Beswick, A. E., 79-1379 Beukens, R. P., 79-3 Beus, S. S., 79-70 (11) Bevan, A. W. R., 79-2721 Bevan, J. C., 79-689, 4077 Beyme, B., 79-2014 (2.8) Beyth, M., 79-1712 Bezsmertny, V. V., 79-4112 Bhandari, N., 79-626, 3951 Bhargava, O. N., 79-3248 (3) Bhasin, B. D., 79-953 Bhaskar Rao, B., 79-3523 Bhaskara Rao, V., 79-4367 Bhatia, M., 79-2167, 2237 Bhattacharya, H., 79-328 Bhattacharya, S. K., 79-626, 3249 (15) Bhattacharyya, C., 79-929 Bhomrah, J. S., 79-2424 Białowolska, A., 79-1201 Bianchi Potenza, B., 79-4307 Bianco, A. S., 79-1502 Bianconi, F., 79-1582, 3094 Bibby, D. M., 79-57, 4066, 4270 Bibee, L. D., 79-1924 Bickel, C. E., 79-1522, 1524, 1557 Bickford, M. E., 79-1027 Bickle, M. J., 79-995, 3159, 3567 Bielefeld, M. J., 79-573, 589, 2665 Bierstedt, P. E., 79-196 Biggar, G. M., 79-2292, 2325, 2329, 2331, 2332, 2337, 2368-2371, 2382, 2407, 2409, 2421, 3574, 3621-3623, 3647 3648, 3662, 3693, 3714, 3721 Bigham, J. M., 79-3320, 3321 Bigioggero, B., 79-4311 Bill, H., 79-759 Billings, M. P., 79-805 (1) Bilson, E., 79-600, 2650, 3953 Bin, W. C., 79-115 Binder, A. B., 79-1488 Binnekamp, J. G., 79-231 Birch, F., 79-3236 (1) Birch, W. D., 79-1720, 1847 Bird, P., 79-2909 Birk, D., 79-1962, 3830 Birnbaum, S. J., 79-3856 Birtill, J. J., 79-187 Bischoff, J. L., 79-3875 Bish, D. L., 79-1648, 2343 Bishop, A. C., 79-4023 Bishop, F. C., 79-4005 Bither, T. A., 79-196 Bjørlykke, K., 79-771 (8), 2014 (3.5)Black, L. P., 79-846 Black, P. M., 79-3050 Blackburn, W. H., 79-2760 Blackwelder, B. W., 79-3840 Blake, B., 79-1302 Blake, D. W., 79-3526 Blake, M. C., Jr., 79-1, 763, 1165 Blake, R. L., 79-1243 Blake, W., Jr., 79-29 Blanchard, D. P., 79-1490, 1547, 2702, 2741 Blanchard, M. B., 79-2716 Blanchot, A., 79-2905 Bland, C. J., 79-1480, 1481

land, D. J., 79-2014 (3.7) lanford, G. E., 79-2674, 3919 lankenburg, H.-J., 79-166, 330, 1322, 1576 latt, H., 79-896 lattner, P., 79-1673 laxland, A. B., 79-3152 lazek, M. C., 79-682, 4381 Ilencoe, J. G., 79-2419 slenkinsop, J., 79-26, 3169 slight, D. F., 79-1840, 1842 3liss, G. M., 79-1944 3loch, S., 79-3875 Block, S., 79-3349 (68) Blockley, J. G., 79-1011 3londiaux, G., 79-3894 3loom, H., 79-1249 Bloom, P. R., 79-3253 Bloss, F. D., 79-37 3lot, C., 79-69 (2) 3luck, B. J., 79-1056 (3.3, 3.8) Blum, K., 79-1531 Blümel, P., 79-3033 Blundell, D. J., 79-994 Blunt, D. J., 79-3146 Bobriyevick, A. P., 79-2762 Bocchio, R., 79-4030 Bochsler, P., 79-2493 Bockheim, J. G., 79-124 Boctor, N. Z., 79-1225, 4074, 4076, 4093 Bode, B., 79-246 Bodmer, Ph., 79-3514 Boegli, J. C., 79-1669 Boellstorff, J., 79-3186 Boelrijk, N. A. I. M., 79-1948 Boettcher, A. L., 79-2389, 3233 Bogard, D. D., 79-2670, 3917, 3957 Bogdanova, L. A., 79-4065 Bogoch, R., 79-3002 Bohush, I. A., 79-2466 Bohlen, S. R., 79-1375, 2301 Bohlin, L., 79-2268 Böhm, H., 79-165 Böhmer, M., 79-1062 Boisen, M. B., Jr., 79-3334 Bokii, G. B., 79-2137 Bokij (Bokii), G. B., 79-3349 (50)Boles, J. R., 79-2536, 3310 Boles, M. O., 79-3349 (76) Bondareva, O. S., 79-3419, 3426 Bonel, G., 79-1326 Bonev, I., 79-739, 3349 (56) Boni, M., 79-1233 Bonissent, A., 79-3349 (54) Bonnet, J.-J., 79-3415 Bonnet, M., 79-3349 (16) Bonnin, D., 79-1619 Bonse, U., 79-3349 (20) Bontoux, J., 79-2046 Boon, J. J., 79-1436 Boone, G., 79-1853 Booth, B., 79-2956 Booth, M. C., 79-1566 Boothroyd, J. C., 79-608 Borchardt, G. A., 79-2066 Borchert, H., 79-3432 Borcsik, M., 79-2351 Borcsik, M. P., 79-2255 Borden, D. M., 79-3902

Borel, M.-M., 79-217 Borges, B., 79-3606 Borggaard, O. K., 79-1316 Boriani, A., 79-4311 Borisenki, L. F., 79-2465 Borisov, I., 79-306 Borley, G. D., 79-3907 Borns, D. J., 79-805 (12) Borodaev, Yu. S., 79-4111 Borradaile, G. J., 79-3026 Bortnikov, N. S., 79-1070 (IV.6) Borutskii, B. E., 79-1061 Bos, P., 79-2163 Bösche, D., 79-410 Bose, M. K., 79-842, 2937 Bosshart, G., 79-1351 Bossière, G., 79-2802 Bostock, H. H., 79-3170 Boström, K., 79-415, 477 Bostrom, R. C., 79-998 Both, R. A., 79-2158 (32) Bott, M. H. P., 79-1056 (4.6) Bottinga, Y., 79-257 Bottomley, R. J., 79-1941 Boucot, A. J., 79-3874 Bougault, H., 79-2974 Boulad, A. P., 79-429 Bouladon, J., 2151, 3467 Boulègue, J., 79-429, 2309, 3889 Bourguignon, P., 79-4039 Bouroullec, J., 79-2511 Bouwer, H., 79-70 (7) Bowden, J. W., 79-3286 Bowden, P., 79-1070 (III.3), 1149, 1177, 2925 Bower, J. F., 79-1517 Bowen, L. H., 79-3320, 3321 Bowen, V. T., 79-3846 Bowes, D. R., 79-1056, 1056 (2.1, 2.2), 2158 (30, 34) Bower, J. F., 79-3910 Bowie, S. H. U., 79-3232 Bowles, J. F. W., 79-2874, 2885 Bowman, A. L., 79-176 Bowman, H. R., 79-1744 Boyadjiev, S., 79-833 Boyadjieva, R., 79-454 Boyce, J. M., 79-594, 3944 Boyd, F. R., 79-341, 354, 518, 520, 653, 669, 838, 2928, 3233, 3233 (III.6, V.5), 3686, 4073, 4074 Boyer, C., 79-1174 Boyer, F., 79-3451 Boyle, E. A., 79-239 Boyle, R. W., 79-3454 Boynton, W. V., 79-632, 639, 1533, 1575, 3961 Bradbury, H. J., 79-1056 (3.1) Bradley, J. G., 79-2713 Bradley, R. I., 79-2254 Bradshaw, M. J., 79-2990 Bradshaw, R., 79-1883 Bragin, I. K., 79-4065 Braithwaite, C. J. R., 79-2993, 4256 Brakel, A. T., 79-1424, 1760 Branagan, D. F., 79-1908 Branch, C. D., 79-1719 Brannon, J. C., 79-1490, 1508, 1547, 2702 Brant, A. A., 79-2158 (2) Brass, G. W., 79-2575 Braun, O., 79-620

Braun, R., 79-2243 Bray, C. J., 79-40 Brecher, A., 79-560 Breitbart, R., 79-2321 Brennan, L., 79-3459 Brennesholtz, R., 79-2807 Breskovska, V., 79-733 Bressler, S. L., 79-70 (11) Brett, N. H., 79-3741, 3742 Brett, R., 79-1493 Brew, D. A., 79-1675 Brew, D. C., 79-70 (11) Brewer, M. S., 79-2927, 3158 Brey, G. P., 79-1009 Breyer, J. A., 79-3014 Bricker, O. P., 79-2243 Bridge, D. McC., 79-4151 Bridge, P. J., 79-757, 2878 Bridgwater, D., 79-6, 3172, 3173, 3231 (7), 3851 Briese, L. A., 79-2249 Brigatti, M. F., 79-3299 Briggs, D. F., 79-1858 Brindley, G. W., 79-1087, 1629, 2815 Brisse, F., 79-3430 Brockamp, P., 79-2191 Broderick, T. J., 79-2901 (5) Broecker, W. S., 79-2507 Broersma, A., 79-84 Brook, R. J., 79-3664 Brookins, D. G., 79-1254, 1372, 2032 Brookmyer, B., 79-1196 Brooks, C., 79-1679 Brooks, C. K., 79-1695, 4174 Brooks, E. C., 79-1812 Brooks, P. W., 79-2556 Brooks, R. R., 79-3245 Broquet, P., 79-3857 Brothers, R. N., 79-3050 Broughton, P. L., 79-753, 2429, 2430 Brousse, A., 79-1199 Brousse, R., 79-2477 Brovkin, A. A., 79-1141 Brovkina, V. S., 79-1141 Brown, A. C., 79-219 Brown, A. V., 79-871 Brown, B. J., 79-1789 Brown, C. E., 79-3538 Brown, D. L., 79-3572 Brown, F. H., 79-4107 Brown, G., 79-1059 (2) Brown, G. E., 79-1138, 2116, 3386 Brown, G. E., Jr., 79-2117, 3709 Brown, G. M., 79-2658 Brown, H., 79-2008 Brown, H. S., 79-1429 Brown, I. D., 79-130 Brown, K. M., 79-689 Brown, L., 79-4413 Brown, L. L., 79-1243 Brown, M., 79-4299 Brown, M. G., 79-602 Brown, P., 79-1835 Brown, P. A., 79-806, 808 Brown, P. E., 79-818, 2795 Brown, R. D., 79-818 Brown, R. J., 79-3224 Brown, R. W., 79-1491, 1516, 1544 Brown, W. E., 79-209

Browne, P. R. L., 79-71 (11), 1616 Brownlee, D. E., 79-636, 1579 Brownlow, A. H., 79-805, 2009, 3054 Bruckert, S., 79-3893 Brueckner, H. F., 79-3819 Brueckner, H. K., 79-784, 1025, 1966 Bruhn, R. L., 79-1783 Brummer, J. J., 79-1483 Brumsack, H.-J., 79-1252 Brunet, W., 79-975 Brunfelt, A. O., 79-1397, 2563, 2631 Brunke, E. G., 79-2158 (12) Bruni, F. J., 79-1066 (2) Bruno, E., 79-2119, 3731 Brunskill, G. J., 79-1425 Brunt, D. A., 79-1188 Bryan, W. B., 79-867, 3231 (20) Bryant, B., 79-1740 Bryhni, I., 79-822 Buat-Menard, P., 79-3879 Buchan, K. L., 79-1867 Buchanan, D. L., 79-3614 Bucher-Nurminen, K., 79-1832 Buchtela, K., 79-2644 Buckley, H. A., 79-689, 3234 Budahn, J. R., 79-2702 Buddemeier, R. W., 79-3841 Budek, L., 79-3285 Budge, C. F., 79-1998 Buell, B. E., 79-2013 (2.2) Buerger, M. J., 79-1038, 3330 Buevoz, J. L., 79-3349 (69) Bugge, J. A. W., 79-3232 (4) Buhl, P., 79-1927 Bukarov, G. S., 79-2194 Bukharov, A. A., 79-2962 Bukin, G. V., 79-385 Bukvetsky, B. V., 79-1127 Bulakh, A. G., 79-2929 Bulens, M., 79-2014 (7.7) Bull, R. K., 79-2677, 2730 Bülow, R., 79-2008 Bunch, T. E., 79-2840 Bunin, K. P., 79-263 Bunting, J. A., 79-1669 Buol, S. W., 79-3320, 3321 Buraiky, M. S., 79-1261 Burba, G. A., 79-3974 Burda, P., 79-2224 Burdick, L. J., 79-1872, 3236 (16)Burger, A. J., 79-2158 (7, 21) Bueger, J. A., 79-39 Burger, N., 79-3401 Burgess, B. A., 79-1247 Burgess, C. J., 79-41 Bürgi, H. B., 79-3347, 3348 Burke, J. G., 79-72 Burke, K., 79-1879, 2895, 2988 Burkhard, A., 79-4100 Burkovskii, S. I., 79-1070 (IV.11) Burlingame, A. L., 79-1436 Burmeister, B. B., 79-2158 (8) Burmistenko, Yu. N., 79-1054 Burnet, D. S., 79-2723 Burnett, A. I., 79-4293 Burnett, D. S., 79-286, 3960, Burnham, C. W., 79-1658, 2107 Burnham, C. Wayne, 79-1275

Burnham, Wayne C., 79-3627 Burnol., L., 79-1070, 1070 (III. 4), 3439 Burns, R. G., 79-294, 584, 1630, Burns, V. M., 79-1630 Burragato, F., 79-4064 Burrows, S., 79-3595 Burt, D. M., 79-70, 70 (3, 8), 309, 310, 489, 898, 1335 Burt, E. R., 79-1742 Burtan, J., 79-4263 Burton, H., 79-2525 Burton, P. W., 79-1929 Burwash, R. A., 79-3873 Bur'yanova, E. Z., 79-329 Buseck, P. R., 79-1098, 1114, 1585, 3396 Busenberg, E., 79-2033 Bustin, R. M., 79-3307 Butikova, I. K., 79-3349 (41) Butler, A. P., Jr., 79-3502 Butler, B. C. M., 79-1331 Butler, I. S., 79-4057 Butler, J. C., 79-3312 Butler, P., Jr., 79-3932 Butt, N. M., 79-1128, 1129 Byers, F. M., Jr., 79-4229 Bykova, E. V., 79-723 Bylund, G., 79-25

Cabannes, F., 79-952 Cabrera, F., 79-3259 Cabri, L. J., 79-1632, 2855 Caby, R., 79-1667 Cachau-Hérreillat, F., 79-3893 Cadenhead, D. A., 79-602 Cady, W. M., 79-3537 Cahay, R., 79-3697 Cahill, R. A., 79-506 Caillère, S., 79-2007 (4) Calas, G., 79-759, 1619 Calk, L. C., 79-1822 Callahan, W. H., 79-1194, 3494 Calle, C. de la, 79-1076 Calleri, M., 79-164 Calvert, S. E., 79-436 Calvo, C., 79-3410 Cambel, B., 79-1070 (III.14) Campbell, F. H. III, 79-3116 Campbell, I. C. C., 79-386 Campbell, I. H., 79-2410, 2752 Campbell, W. J., 79-2260 Cameron, B., 79-805 (7) Cameron, E. N., 79-839, 4072 Cameron, I. B., 79-1229 Cameron, N. R., 79-4151 Camfield, P. A., 79-997 Campbell, E. Y., 79-3205 Campbell, H. W., 79-1539 Campbell, J. A., 79-3446 Campbell, W. J., 79-1243 Campos, C., 79-3349 (23) Cande, S. C., 79-1869, 3084 Canesson, P., 79-2014 (2.12) Cann, J. R., 79-2974, 4078 Cannon, W. F., 79-3539 Cano, F. H., 79-198 Cantagrel, J. M., 79-3825 Canterford, J. H., 79-1159 Capdecomme, H., 79-3893 Capedri, S., 79-482, 1447, 1819, 2478, 4020, 4190

Caputo, C., 79-603, 609-612, 3948 Caravani, L., 79-4313 Cardoso, J. N., 79-1437, 1441 Carey, S. W., 79-1914 Carlile, C. J., 79-1271 Carlon, P. A., 79-1913 Carlos, L., 79-2813 Carlson, C., 79-849 Carlson, J., 79-2474, 3992 Carlson, L., 79-428 Carlson, R. W., 79-2495 Carmichael, C. M., 79-3851 Carmichael, I. S. E., 79-1379, 2819 Carmignani, L., 79-3516 Carmouze, J. P., 79-110 Caro, P., 79-1314 Carpenter, M. A., 79-663, 1598, 4024 Carpenter, P. A., III, 79-1742 Carpenter, R. H., 79-873 Carper, E. G., Jr., 79-980 Carr, D. D., 79-3540 Carr, M. J., 79-866 Carr, S. G., 79-118 Carr, W. J., 79-4229 Carrara, C., 79-4269 Carroll, W. M., 79-379 Carswell, D. A., 79-1381, 3233 (II.4, II.7)Carter, D. J., 79-1776, 4153 Carter, J. S., 79-1151 Carter, P. W., 79-2554, 2555 Carter, R. M., 79-1784 Carter, R. W. G., 79-1790 Carter, S. R., 79-2476, 2727, 3236 (2) Caruba, R., 79-3694 Carusi, A., 79-609-612, 3948 Carvalho, A. D., de, 79-2150 Carvalho, D., de, 79-2182 Cas, R. A. F., 79-1723 Casacchia, R., 79-609, 611, 3948 Casas, A., 79-3905 Caschetto, S., 79-3876 Cases, J. M., 79-2026 Casey, J. F., 79-2986 Casillas, S. R., 79-85 Cassedanne, J.-O., 79-1902, 1903, 3120, 3121, 3765 Cassedanne, J.-P., 79-1902, 1903, 3120, 3121, 3765 Cassignol, C., 79-2646 Casteel, K. D., 79-2016 Castro, A. J., 79-1564 Cathcart, J. B., 79-3795 Cather, E. E., 79-1243 Caticha-Ellis, S., 79-3349 (23) Catré, A. C. B., 79-3469 Catti, M., 79-207, 208 Cattroll, H. M., 79-4365 Cauffman, L. B., Jr., 79-891 Caulet, J.-P., 79-3457 Causey, R. A., 79-313 Cavarretta, G., 79-609 Cawthorn, R. G., 79-806, 808 Cebula, D. J., 79-2014 (2.2), Čech, F., 79-2841, 4122 Cellini Legittimo, P., 79-3884 Cemič, L., 79-4343 Cendales, M., 79-621, 1531

Černy, P., 79-4015, 4059

Chadha, D. K., 79-3249 (21) Chafetz, H. S., 79-4273 Chagin, M. M., 79-2962 Chaidez, L. L., 79-85 Chaillou, D., 79-2676 Challis, G. A., 79-2941 Chambers, A. D., 79-818 Chambers, J. L., 79-129 Chamid, S., 79-3411 Chaminant, G., 79-1887 Champ, D. R., 79-2594 Champness, P. E., 79-1241 Chan, K. K., 79-700 Chanal, J. L., 79-2046 Chandrasekhara Gowda, M. J., 79-3300 Chandrasekharam, D., 79-841 Chang, C., 79-1645, 4154 Chang, J. C., 79-1315 Chang, L. L. Y., 79-321, 331 Chang, S., 79-641 Chang, S.-L., 79-3349 (23) Chang, Y., 79-1180 Channell, J. E. T., 79-3140 Chant, R. A., 79-1389 Chantret, F., 79-429 Chao, E. C. T., 79-1520, 4081 Chao, G. Y., 79-4116 Chapman, C. A., 79-805 (11) Chapman, N. A., 79-3692 Chappell, B. W., 79-692, 1725, Charette, M. P., 79-583, 1287 Charles, R. G., 79-896 Charles, R. W., 79-357, 677, 1339 Charlu, T. V., 79-2300 Chase, R. B., 79-1027 Chasteen, N. D., 79-1247 Chatelain, A., 79-322 Chatillon-Colinet, C., 79-2280 Chatterjee, M. K., 79-2347 Chatterjee, N. D., 79-1108 Chaudhari, M. W., 79-3249 (8) Chaudhri, R. S., 79-3249 (12) Chaudhry, M. N., 79-112, 113, 840, 899, 903, 3018 Chaudhuri, S., 79-2032, 2537 Chauhan, D. S., 79-4265 Chaumont, J., 79-3966 Chauris, L., 79-961, 2767, 2783 Chaussidon, J., 79-2014 (2.5) Chayes, F., 79-62-67, 440, 810, 811, 4128 Chelishev, N. F., 79-1070 (IV.7) Chen, C.-C., 79-4029, 4037 Chen, C.-H., 79-4054, 4197, 4317 Chen, D., 79-646, 2306, 4086 Chen, G., 79-4320 Chen, H. Y., 79-3349 (38) Chen, J. H., 79-1496, 3823, 4212 Chen, P. Y., 79-78 Chen, R., 79-1122 Chen, T. T., 79-331, 2855, 4117 Chen, Y., 79-646, 2358 Chepurov, A. I., 79-2916 Chermette, A., 79-1889 Chernitsyn, V. B., 79-2211 Chernosky, J. V., 79-3734 Chernyakhovskiy, A. G., 79-2069 Cherry, M. E., 79-694, 2323, 3385

Cheshire, S. G., 79-1751 Chesselet, R., 79-3879 Chester, J., 79-3101 Chevalier, R., 79-326 Chevrel, R., 79-194 Chew, K. J., 79-2162 Chianelli, R. R., 79-3409 Chiari, G., 79-2119 Chickerur, N. S., 79-2364 Chidester, A. H., 79-3537 Chien, S. H., 79-3206 Chiesa, S., 79-4241 Childs, C. W., 79-2014 (6.8) Chilingar, G. V., 79-3239 Chin, J. F. S., 79-1257, 2965 Chingchang, B., 79-3248 (14) Chinner, G. A., 79-4295 Chinner, J. A., 79-3030 Chiron, J.-C., 79-3458 Chlebowski, R., 79-1091 Chlebus, S. W., 79-1175 Chodos, A. A., 79-2704 Chopin, C., 79-2770 Chorianopoulou, P., 79-2007 (23)Chorlton, L. B., 79-3650 Chou, C.-L., 79-3823 Chou, I.-M., 79-1266 Chouet, B., 79-2966 Chovan, M., 79-4143 Chowdhury, A. N., 79-1467 Chrenkova-Paucirova, M., . 351 Christ, C. L., 79-199 Christ, P., 79-620 Christensen, E. R., 79-1265 Christensen, H. H., 79-1316 Christensen, N. I., 79-1873 Christian, R. P., 79-1564, 1565 Christiansen, R. L., 79-4228 Christiansson, K., 79-3148 Christie, J. M., 79-3604 Christie, J. S., 79-4156 Christophe-Michel-Lévy, M., 79-2673, 2676, 2726 Chronis, G. Th., 79-3000 Choquette, P. W., 79-47 Chou, C.-L., 79-558 Choudhuri, A., 79-668 Chubarov, V. M., 79-3517 Chuck, R. G., 79-1184 Chukhrov, F. V., 79-2014 (1.5), 4084, 4085 Chung, H. M., 79-2286 Church, B. N., 79-1710 Church, T. M., 79-3304 Church, W. R., 79-1022, 1778 Churchman, G. J., 79-2014 (6.8), 2023 Chvileva, T. N., 79-4112 Ciabrini, J.-P., 79-3889 Ciccacci, S., 79-606 Čičel, B., 79-159, 2035 Chicon, G., 79-3298, 4042 Cicmil, S., 79-2007 (16) Ciesielski, P. F., 79-36 Cilliers, P., 79-2158 (4) Cimbálniková, A., 79-3246 Cimmino, F., 79-2483 Činčárová, M., 79-4007 Cintala, M. J., 79-3939, 3945 Ciolkosz, E. J., 79-3315 Cipriani, N., 79-4260 Cirlin, E. H., 79-3970

isowski, S. M., 79-561, 2264 lanton, U. S., 79-3924 laridge, G. G. C., 79-2077 lark, A. H., 79-18, 4032 lark, A. L., 79-4277 lark, A. M., 79-1143, 1628 2869, 2855 lark, A. M. S., 79-1206 Clark, B. C., III, 79-1564, 1565 Clark, C. A., 79-4339 Clark, D. R., 79-79, 87 Clark, G. J., 79-704 Clark, J. F., 79-2746 Clark, J. R., 79-199, 1138 Clark, M. J., 79-4412 Clark, P. E., 79-573, 575 Clark, R. G., 79-805 (12) Clark, T., 79-2836 Clark, T. P., 79-1263 Clarke, D. B., 79-3233 (II.7, III.9), 3578, 3672 Clarke, G. K. C., 79-4356 Clarke, J. W., 79-4325 Clarke, R. M., 79-757 Clarks, G. J., 79-1369 Clasteren, P. W. C. van., 79-3869 Clauß, A., 79-192 Clauer, N., 79-3162 Clauws, P., 79-3400 Clay, W., 79-1020 Clayton, A. R., 79-2222 Clayton, D. D., 79-2710 Clayton, R. N., 79-419, 622, 2534, 3956 Clemency, Ch. V., 79-3902 Cliff, G., 79-1241 Clifford, T. N., 79-2158 (21), 3035 Cline, T. W., 79-4348 Clocchiatti, M., 79-3457 Clover, M. R., 79-3 Clynne, M. A., 79-3680 Cobbing, E. J., 79-4152 Cochran, A., 79-2681 Cochran, J. K., 79-424, 3855 Coda, A., 79-186 Coe, R. S., 79-664 Coelho, A. V. P., 79-2922 Cohen, E. R., 79-596 Cohen, J. B., 79-181 Cohen, M., 79-550 Cohn, J. G., 79-3055 Coish, R. A., 79-2684, 2691, 2695, 4235 Coisy, P., 79-1707 Colbourn, P., 79-3544 Cole, J. W., 79-1729 Cole, R. D., 79-1810 Colella, C., 79-2411, 3756 Coleman, L. C., 79-2718, 4365 Coleman, M., 79-3856 Coleman, N. T., 79-3269 Coleman, P. J., Jr., 79-563, 592 Coleman, R. G., 79-3231 (5) Coles, R. L., 79-2746 Collen, J. D., 79-1805 Collerson, K. D., 79-772, 3172, 3173, 3231 (7) Collet, L. S., 79-1487 Collette, B. J., 79-3131 Colley, H., 79-1221 Collie, T. W., 79-2021

Collingborn, C. E. M., 79-220 Collins, A. T., 79-1348 Collins, J. A., 79-236 Collinson, D. W., 79-559, 2707 Colombo, A., 79-2625 Colp, J., 79-2966 Colton, R. J., 79-2650 Colwell, J. A., 79-119 Combes, P.-J., 79-2007 (5, 6), 3451 Comin-Chiaramonti, 79-1714, 4196 Comins, N. R., 79-1583 Compston, W., 79-1548, 1956, 3168 Conaghan, P. J., 79-4414 Concha, F. J. M., 79-1437 Condie, K. C., 79-1377 Condrate, R. A., Sr., 79-2048 Coney, P. J., 79-4322 Conforto, L., 79-3809 Cong, B., 79-458, 1715, 3043, 3822 Connerney, J. E. P., 79-1877 Conti, L., 79-1754 Cook, F. A., 79-957 Cook, F. D., 79-2580 Cook, R. B., 79-2010, 3123 Cooley, E. F., 79-3220 Cooper, A. F., 79-4203 Cooper, D. C., 79-1050, 3465 Cooper, J., 79-1820 Cooper, J. A., 79-14, 3164 Cooper, J. P., 79-3655, 3656 Cooper, M. J., 79-2127, 2147 Cooray, G., 79-2011 Coppens, R., 79-1478 Coradini, A., 79-614, 4190 Coradini, M., 79-3948 Cordell, B. M., 79-524 Cordsen, A., 79-3424 Corlett, M., 79-4070 Corlett, M. I., 79-4123 Corliss, J. B., 79-430 Cornell, D. H., 79-2158 (15) Corrado, G., 79-69 (3) Corre, Y., 79-2767, 2783 Corrigan, G., 79-2275 Corser, C., 79-3528 Cortecci, G., 79-3516, 3808 Cortesogno, K., 79-4239-4241, 4310 Coscio, M. R., Jr., 79-638, 3978 Costa Neto, C., 79-1437 Costello, M. B., 79-757 Cotillon, P., 79-3534 Coudray, J., 79-2200 Coughlan, B., 79-379-382 Coulon, C., 79-2479 Coumoul, A., 79-3466 Couper, A. G., 79-2869 Courel, L., 79-3450 Coutinho, J. M. V., 79-1226 Cowan, W. R., 79-1963 Cowie, J. W., 79-1923 Cowley, J. M., 79-185 Cox, F. R., 79-3322 Craddock, C., 79-798 Cradwick, P. D., 79-2115 Craig, H., 79-2570 Craig, J. R., 79-745, 3355, 3739, 4094 Crane, A., 79-914

Crane, K., 79-430 Cranstone, D. A., 79-1023 Cranstoun, R. N., 79-1758 Cranwell, P. A., 79-2541 Craw, D., 79-2911, 4158 Crawford, A. J., 79-1774 Crawford, M. L., 79-1541, 1542, Crawford, W. A., 79-2252, 3547 Cremers, A., 79-2014 (2.11) Crerar, D. A., 79-2255, 2351, Cressey, G., 79-1267, 2299, 3585, 3695 Cretenet, J. C., 79-252 Criddle, A. J., 79-1035, 2207, 2853, 2885 Crisler, K., 79-1189 Crnicki, J., 79-2007 (7) Crocket, J. H., 79-2473 Cronan, D. S., 79-500, 2530, 3797 Crook, W. W., III, 79-761, 1591, 2863, 2872, 4011 Cross, H., 79-2018 Cros, P., 79-1795 Cros, P. G., 79-4279 Cross, C., 79-70 (13) Cross, L. E., 79-4348 Crossley, R., 79-4223 Croudace, I. W., 79-3226 Crough, S. T., 79-1925 Crousilles, M., 79-3894 Crouzel, F., 79-1421 Crow, M. J., 79-1827 Crowell, J. C., 79-3135 Crowley, J. K., 79-1741 Crozaz, G., 79-1536, 2675, 2736, 3918 Cruden, D., 79-1045 Crutzen, P. J., 79-3236 (17) Cruz, M. I., 79-1073, 2014 (2.12)Cruz-Cumplido, M. I., 79-1078 Csanády, A., 79-2217 Csordás, A., 79-2217 Cudey, C., 79-3472 Cuff, C., 79-1218 Culbert, R. R., 79-1484 Cullen, D. J., 79-1010 Cullers, R. L., 79-1735, 2537 Cummings, R. B., 79-70 (5) Cumnold, D. M., 79-71 (4) Cundari, A., 79-1754 Cunningham, C. G., 79-1305, 3464 Curie, M., 79-2014 (4.7) Curnow, J., 79-596 Currie, J. B., 79-802 Currie, K. L., 79-260, 3170 Currie, R., 79-505 Curry, K. J., 79-3220 Curtis, C. D., 79-1381 Curtis, D. B., 79-3921, 3949 Curtis, L. W., 79-260, 4018 Curtis, M. T., 79-1881, 1882 Cuttitta, F., 79-4081 Czamanske, G. K., 79-1, 763, Czerwonka, J. A., 79-2998 Dabrowski, H., 79-2208 Dadone, A., 79-1992 Dagelaiskaya, I. N., 79-924

Dai, Y., 79-1800

Dai Pra, G., 79-1006 Daily, W. D., 79-564 Daimon, N., 79-94, 3740 Dainty, A. M., 79-544 Dakowski, M., 79-3202 Dall'Aglio, M., 79-1233, 3882 Dallmeyer, R. D., 79-1024 Dal Negro, A., 79-186, 3384, 4004 Dal Piaz, G. V., 79-1833, 4315 Dalrymple, G. B., 79-3177 Daly, S., 79-1958 Dalziel, I. W. D., 79-3838 D'Amico, J., 79-3959 Damon, P. E., 79-71 (20) d'Amour, H., 79-1268, 3349 (71) Danborn, E. A., 79-3774 Danchin, R. V., 79-3233 (II.6) Dangeard, A., 79-3452 Dangerfield, J., 79-1699 Danilovich, L. G., 79-3811 Dankers, P. H. M., 79-4334 Dankiewicz, J., 79-2355, 4101 Darbyshire, D. P. F., 79-2927, 3158 D'Argenio, B., 79-1233 Darling, D., 79-3146 Darling, R., 79-434 Darragh, P. J., 79-2014 (7.2) Dasch, E. J., 79-1396 Das, Brijraj, K., 79-3039 das Gupta, D. R., 79-1567, 2363 Dasgupta, H. C., 79-4323 Dasgupta, S., 79-688, 3038 Das Gupta, S. P., 79-1567, 1839, 3520 Das Poddar, P. K., 79-2347 Datta, I., 79-2157 Datta, N., 79-1131 Daveau, S., 79-4259 David, B., 79-2646 David, M., 79-2598 Dávidová, Š., 79-4048, 4188 Davidson, L. R., 79-1846 Davidson, P., 79-366 Davie, I. W., 79-4342 Davies, F. B., 79-1662 Davies, G., 79-948, 3057 Davies, G. L., 79-1750 Davies, J. F., 79-3829 Davies, R. I., 79-3327 Davies, A. E., 79-2927, 3158 Davis, A. S., 79-2716 Davis, B. L., 79-3546 Davis, B. T. C., 79-1686 Davis, E. N., 79-1838 Davis, G. H., 79-4322 Davis, G. L., 79-22-24, 3184, 4149 Davis, J. A., 79-2250 Davis, K. E., 79-291 Davis, M., 79-3799 Davis, P. A., Jr., 79-3180 Davis, T. E., 79-33 Davison, W., 79-2764 Davy, R., 79-1424 Davydov, E. V., 79-4193 Dawson, J. B., 79-653, 654, 837, 847, 2807, 3233 (II.8, III.2, III.8), 4005 Dawson, K. R., 79-1240 Dawson, W. C., 79-4272 Day, K., 79-587 Day, K. L., 79-2415

Day, R., 79-960 Dayvault, R. D., 79-4388 De, A., 79-4170 De, B. R., 79-532, 634 de Albuquerque, C. A. R., 79-2613 de Almeida, F. F. M., 79-4327 Dean, J. M., 79-1228 Dean, W. E., 79-1433 De Angelis, G., 79-3343 Deans, T., 79-1623 De Arambarri, P., 79-2348 De Argollo, R., 79-1410 Deb, M., 79-1486 Debat, P., 79-4049 Debeglia, N., 79-4366 Debenedetti, A., 79-3193 de Béthune, P., 79-652 Debras, G., 79-1313 Debrun, J.-L., 79-3894 de Bruyn, P. L., 79-84 De Camargo, W. G. R., 79-2007 (8) De Capitani, L., 79-3895 Dechambre, G., 79-1326 Decker, E. R., 79-957 Declercq, J.-P., 79-214, 3425 de Cristo, F. P., 79-3469 Deegan, C. E., 79-789, 789 (1, 5, Deegan, S. E., 79-4254 Deelman, J. C., 79-275, 1639 DeFelice, J., 79-3959 Deffeyes, K. S., 79-1904 Deganello, S., 79-3364 Degens, E. T., 79-3839 Degewij, J., 79-534 DeHon, R. A., 79-555 de Kanel, J., 79-2365 de Kersabiec, A. M., 79-2619 Dekeyser, W., 79-3400 De Kimpe, C. R., 79-3279 Dekker, A. G. C., 79-676 Delabio, R. N., 79-120 de la Calle, C., 79-2014 (1.3) De Laeter, J. R., 79-1011-1014, 1802, 2635, 2637, 2715 Delaney, J. R., 79-1409, 2984 Delaney, J. S., 79-847 Delano, J. W., 79-1523, 1527 Delapalme, A., 79-3349 (16) de La Roche, H., 79-1689, 1705, 2612 Delbove, F., 79-368 De Leeuw, J. W., 79-1436 Del Fa, C., 79-3476 Delibrias, G., 79-3155 Deliens, M., 79-767, 2772 Delitala, M. C., 79-3809 Della Giusta, A., 79-4004 Delmon, B., 79-2014 (7.7) Del Moro, A., 79-3808 Deloffre, R., 79-2511 DeLong, S. E., 79-3136 Del Pezzo, E., 79-69 (3) Demange, M., 79-918, 919 Demarcke, J., 79-1766 Demianets, L. N., 79-1066 (4) Demidovich, L. A., 79-2560 de Montalvão, R. M. G., 79-1687 Demortier, G., 79-1313 Dence, M. R., 79-2740, 2741, 4003 De Negri, G., 79-1447

DeNeufville, J. P., 79-3409 Deneuville, J.-L., 79-2280 De Niro, M. J., 79-1435 Denisenko, Ye[E.], A., 79-2462 Denner, W., 79-1268, 3349 Dent, R. H., 79-2158 (12) Den Tex, E., 79-1948 Dent Glasser, L. S., 79-3349 (33) de Pablo-Galan, L., 79-2014 (5.6)De Paeolo, D. J., 79-1408, 2704, 3803, 3804 DePaulo, D. J., 79-1505 De Pieri, R., 79-163, 685 Deputy, G. O., 79-950 de Quervain, F., 79-1034, 4142 Dergacheva, T. N., 79-2933 De Rita, D., 79-3651 Derksen, U., 79-3955 Deroo, G., 79-2587 Desai, G. T., 79-2273 Desborough, G. A., 79-1428, 2887 Desmet, A., 79-1773 Desmons, J., 79-486, 652, 1834 de Souza Santos, P., 79-2014 (5.1)Dessau, G., 79-3516 Detrick, R. S., 79-1925 Deutsch, S., 79-69 (7) Dévigne, J.-P., 79-1205 de Villiers, J. P. R., 79-2164 Devirts, A. L., 79-2259 Devismes, P., 79-1057 De Voto, R. H., 79-1060 (D.1) de Waal, S. A., 79-1154, 2158 (6), 2875Dewey, J. F., 79-3136 de Wit, M. J., 79-1783 de With, G., 79-132 Dexter, A. R., 79-3072 Dias, J. M. Matos, 79-3470 Diaz, J. M., 79-588 Di Battistini, G., 79-1714, 4196 Dibble, R. R., 79-1762 Dibble, W. R., Jr., 79-1093 di Brozolo, F. R., 79-2704 Dick, H. J. B., 79-2947 Dickens, B., 79-209 Dickens, P. G., 79-187 Dickey, J. S., *Ir.*, 79-151, 353 Dickson, B. L., 79-1369 Dickson, F. W., 79-1627, 1657 Dickson, J. A. D., 79-1633 Didier, J., 79-830, 4183 Didyk, B. M., 79-496 Diederich, H. G., 79-2188 Diessel, C. F. K., 79-3050 Dietrich, F., 79-183 Dietrich, J. A., 79-3220 Dietrich, J. E., 79-2007 (4, 9) Dietrich, R., 79-758, 2811, 3090 Dietrich, R. V., 79-760, 1910 Dietrich, V. J., 79-1400 Dietz, R., 79-70 (12) Di Giulio, V., 79-4016 Dikow, Ju. P., 79-1580 Dillard, J. G., 79-2014 (2.6) Dillmann, R., 79-2434 Di Ludovico, V., 79-3756

3652 Dimitrova, A., 79-306 Dimroth, E., 79-464, 1766 Din, V. K., 79-1047, 4077 Ding, K., 79-1649 Dinnin, J. I., 79-4081 Dinur, D., 79-2542 Dion, M., 79-1133 Dippenaar, A., 79-1985 di Sanseverino, L. R., 79-3431 Divakara Rao, V., 79-885 Divakov, K. S., 79-2211 Divi, S. R., 79-3051 Divjaković, V., 79-3349 (44) Dixit, S. P., 79-3270 Dixon, C. J., 79-3235 Dixon, J. M., 79-2410 Dixon, J. R., 79-4233 Dixon, K., 79-50 Dixon, S. A., 79-4233 Dixsaut, C., 79-3894 Djokić, V., 79-2007 (10) Dmitriev, L. V., 79-3934 Dmitrieva, M. T., 79-743, 3349 Dmitriyev, D. N., 79-2929 Dobbie, W. A., 79-41 Dobbs, J. E., 79-2610 Dobinson, A., 79-789 (7) Dobkina, E. I., 79-2259 Dobretsov, N. L., 79-2979 Dockter, R. D., 79-1028 Dodd, C. G., 79-139 Dodd, R. T., 79-629 Dodge, C. F., 79-3312 Dodge, F. C. W., 79-1822 Dodson, J. S., 79-3757 Doe, B. R., 79-1197 Doelling, H. H., 79-3501 Doig, R., 79-19 Dolfi, D., 79-69 (4), 1752, 3651, 3715, 3728 Dollfus, A., 79-586 Dollimore, D., 79-3064 Domagala, R. F., 79-1312 Donaldson, C. H., 79-828, 837, 2274, 3575, 3608, 3609 Donath, F. A., 79-71, 3236 Donato, M. M., 79-3231 (5) Doner, H. E., 79-3323 Donn, B., 79-2415 Donnay, G., 79-1097, 2843, Donnay, J. D. H., 79-133, 134, 1097, 2843 Donnelly, T. H., 79-416 Donovan, J. J., 79-3854 Donovan, R. N., 79-2161 Dons, J. A., 79-787, 787 (1), 787 (8) Doolan, B. L., 79-2797 Dorfman, M. D., 79-1061, 2070 Dorman, H. J., 79-545 Dornberger-Schiff, K., 79-3349 Dorzapf, A. F., Jr., 79-2628 Dorzhnamzhaa, D., 79-3040 Dos Santos, A., 79-2433 Dosso, L., 79-2494, 3825 Dostal, J., 79-465, 482, 2479, Dott, R. H. Jr., 79-1660

Dimitriadis, S., 79-698, 2322, Doukhan, J. C., 79-3602, 3603, 4332 Doukhan, N., 79-4332 Dowty, E., 79-943 Dragon, J. C., 79-3978 Drake, M. J., 79-551, 1274, 1574, 2692, 3911 Dran, J. C., 79-3966 Draper, V. F., 79-1334 Dravis, J., 79-4278 Drees, L. R., 79-3319 Dreher, G. B., 79-243 Dreibus, G., 79-535, 1531 Dreschhoff, G., 79-1189 Drever, J. I., 79-2527, 3819. 3859, 3887 Drewes, H., 79-2950, 4214 Dristas, J. A., 79-2893 Drits, V. A., 79-2014 (1.5) Drnzik, E., 79-1070 (III.2) Drnzikova, L., 79-1070 (III. 2) Drozd, R. J., 79-3920, 3980 Drozhzhin, V. M., 79-1465 Druffel, E. M., 79-2571 Drummond, A. J., 79-1184 Drury, A. S., 79-1445 Drury, M. J., 79-1875 Drury, S. A., 79-3231 (8), 3824 Druzhinin, L. N., 79-2762 Drysdale, D. J., 79-2386 Duba, A., 79-2403 Dube, A., 79-1567 Dubernat, J., 79-1076 Dubinchuk, V. T., 79-735, 1384, Dubow, J., 79-2169, 3075 Dubow, J. B., 79-4354, 4359 Duchi, G., 79-3516 Ducrot, J., 79-1667 Duda, R., 79-2224, 4068 Dudich, E., 79-3845 Dudkin, O. B., 79-1061 Dudley, W. C., 79-3850 Duffield, W. A., 79-1769 Duggan, M. B., 79-1759 Duguid, J. O., 79-2255 Duncan, A. M., 79-1709, 2826 Duncan, A. R., 79-1537 Duncan, R. A., 79-1009 Dungan, M. A., 79-1490, 1491, 2972, 2973, 3914 Dungworth, G., 79-3146 Dunham, A. C., 79-826, 1973, 1974, 3222 Dunham, J. B., 79-1809 Dunham, Sir Kingsley, 79-3232 (6) Dunitz, J. D., 79-3347, 3348 Dunlop, J. S. R., 79-4268 Dunn, P. J., 79-395, 1355, 1356, 1641, 2822, 2833, 2842, 2852, 2865, 2870, 2883, 4009, 4115, 4120 Dunn, P. T., 79-4121 Dunoyer de Segonzac, G., 79-1836 Duplessy, J. C., 79-1452 Dupuy, C., 79-2479, 3231 (14), Durasova, N. A., 79-1070 (IV.9) Durham, J. W., 79-71 (3) Durham, W. B., 79-1302 Ďurica, D., 79-3157 Ďurišová, J., 79-1070 (IV.2)

urney, D. W., 79-1304 urovič, S., 79-3349 (3, 4, 6) Jurrance, E. M., 79-1419, 1460 Durrani, S. A., 79-2677, 2730, 3203, 4342 Juseaux, M., 79-586 Dusseault, M. B., 79-4248 Dust, S., 79-1536, 3918 Outch, S. I., 79-4159 u Toit M. C., 79-2158 (10), 2901 (7, 9) Dutta, B. C., 79-2007 (13) Dutton, S. P., 79-3015 Duval, P., 79-3597 Dwornik, E. J., 79-1646, 4081 Dyal, P., 79-564 Dybczyński, R., 79-3897 Dyck, W., 79-1060 (A.2) Dymek, R. F., 79-2704 Dymond, J., 79-425, 430, 1018 Dyni, J. R., 79-3303 Dypvik, H., 79-472, 3866 Dyrssen, D., 79-2504 Dzantuganov, N. I., 79-224 Dzetovetskiy, M. B., 79-2211 Dzierźanowski, P., 79-107 Dzurisin, D., 79-2662

Eadie, B. J., 79-2553 Eadington, P. J., 79-2940 Earle, S. A. M., 79-499 Easterbrook, G. D., 79-2173 Eaton, A., 79-3550, 3551, 3553 Eberhardt, P., 79-2658, 3922 Eberl, D., 79-2014 (4.5), 2036 Eberlein, G. D. 79-4110 Echle, W., 79-2038 Eck, J. C., 79-1105 Edenharter, A., 79-3349 (44) Edmunds, W. M., 79-1376 Edwards, A. C., 79-1016 Edwards, P., 79-2846 Edwards, P. D., 79-3860 Effenberger, H., 79-1147 Efimov, A. S., 79-1070 (IV.9) Efremova, R. I., 79-315 Efremova, S. V., 79-1070 (V.1) Eganhouse, R. P., 79-1264 Eggler, D. H., 79-281, 302, 856, 1310, 3233 (III.1), 3644, 3689, 3736 Eggleton, R. A., 79-692 Eglinton, G., 79-1441 Egorov-Tismenko, Yu. K., 79-2093, 2094, 2130, 2145, 3349 (39)Ehlmann, A. J., 79-1591 Ehmann, W. D., 79-3916, 3929, 3953 Ehrenberg, S. N., 79-3233 (IV.3) Eichin, R., 79-1891 Eichmann, R., 79-2509

Eidam, J., 79-1070 (III.13)

Eisbacher, G., H., 79-892, 2202

El-Anbaawi, M. I. H., 79-3309 El-baz, F., 79-576, 2669

El Goresy, A., 79-1503, 1528

Einarsson, Ö., 79-3148

Eisenreich, S. J., 79-2256

Elberty, W. T., 79-2566 Elderfield, H., 79-494

Eisma, D., 79-2022 Eklund, W., 79-425 Elachi, C., 79-556 Elias, M., 79-1012 Eliason, E. M., 79-573, 591 Eliásŏvá, I., 79-261 Eliášová, M., 79-2377, 2378 Elina, N. A., 79-662 El-Kammar, A. M., 79-1479, 2518, 3309 Elliott, C. J., 79-3234 Ellis, A. J., 79-3883 Ellis, D. E., 79-2420, 3675, 3688 Ellis, P. J., 79-2624 Ellis, R. A., 79-3232 (6) Ellison, R. A., 79-2961 Ellwood, B. B., 79-1868, -3079, 4363 El-Manei, M. I., 79-1204 Elmore, D., 79-3 El Ramly, M. F., 79-2482 Elsass, F., 79-1077 El Shatoury, H. M., 79-1211 El-Sokkary, A., A., 79-1443 Elson, C. M., 79-2613 Elston, D. P., 79-70 (11), 4165 Eltantawy, I. M., 79-2044, 3346 Eltayeb, M., 79-4360 Elthon, D., 79-1782 Elverson, E. R., 79-774 Elvestad, L., 79-782 El-Wakil, H. A., 79-2425 Embrey, P. G., 79-1035 Emeleus, C. H., 79-4180 Emerson, S., 79-2513 Emiliani, C., 79-1457, 2455 Emiraliev A., 79-1120 Emslie, R. F., 79-853, 1000 Endo, Y., 79-4092 Engel, C. G., 79-3827 Engel, R. F., 79-2888 Engelhardt, W. von, 79-2652 Engels, J. C., 79-2634, 4161 England, B. M., 79-710, 2844, 3062 England, P. C., 79-3023 Englert, P., 79-2733 Englund, E. J., 79-805 (12) Enjoji, M., 79-3462 (6) Epstein, S., 79-1435, 3962 Erasmus, C. S., 79-714 Erd, R. C., 79-1, 763, 1596, 4110 Erez, J., 79-493 Erickson, R. J., 79-3183 Ericson, D. B., 79-3128 Eriksson, C.-O., 79-4250 Ermanovics, I. F., 79-1676, 1677, 2901, 2901 (10), 3231 Ermilova, L. P., 79-2014 (1.5) Ernst, T., 79-1378 Ernst, W. G., 79-869, 870, 922, 1833, 2799, 2983 Ertl, R. F., 79-968 Esbensen, K. H., 79-821 Eskenazi, G., 79-432 Essene, E. J., 79-1375, 1835, 2301, 2795, 4287 Esson, J., 79-435, 2813 Estéoule, J., 79-2014 (3.6) Estéoule-Choux, J., 79-2014 (3.6)Estep-Barnes, P. A., 79-1646 Estes, E. L., 79-1246 Eswaran, H., 79-115 Etique, P., 79-3955

Euge, K. M., 79-70 (10) Eugster, O., 79-3922 Evans, A. M., 79-1148, 3463 Evans, B. W., 79-921, 4306 Evans, C. D. R., 79-4254 Evans, H. T., Jr., 79-1144, 3335, 3404, 4337 Evans, M. E., 79-1767 Evans, P. H., 79-1565 Evans, S. H., Jr., 79-4230 Evensen, N. M., 79-2476, 2725. 2727, 3236 (2) Evrard, M., 79-1461 Ewart, A., 79-3231 (2) Ewing, R. C., 79-1591, 2840, 3354, 4035 Exley, C. S., 79-1398 Eymery, J.-P., 79-1637 Eysel, W., 79-2136 Facchinelli, A., 79-2119, 3731 Facer, R. A., 79-1724 Færseth, R. B., 79-780, 4179 Fahrig, W. F., 79-1021 Fairbairn, H. W., 79-1964 Fairbrothers, G. E., 79-866 Fairhead, J. D., 79-3132 Falaleev, O. V., 79-3349 (51) Falkum, T., 79-450 Fallaleeva, L. G., 79-3349 (51) Falter, M., 79-1354 Fan, P.-F., 79-1763, 2014 (4.4) Fanucci, O., 79-4190 Farach, H. A., 79-4339 Fareth, E., 79-779 Farinato, R., 79-69 (4), 3343 Farinha Ramos, J. M., 79-2150, 2601, 3512 Farmer, V. C., 79-689, 1059 (6), 1086, 1638, 2014, 2015 (6.7) Farn, A. E., 79-1357, 2440 Farrar, E., 79-18 Farrell, D. M., 79-2821 Farrington, J. W., 79-2531, 2557 Farrow, G. E., 79-1789 Farzaneh, A., 79-2636 Fasano, A., 79-604 Faugères, J. C., 79-1796 Faul, H., 79-1965 Faust, G. T., 79-1736 Fawcett, J. J., 79-1695 Fawckner, J. F., 79-1219 Fechtig, H., 79-572 Federico, C., 79-614 Fedotova, M. G., 79-3484 Feely, H. W., 79-2533 Fehler, M., 79-2966 Feigenson, M., 79-469 Fejer, E. E., 79-1628 Fejer, Z., 79-1895, 4232 Feldkamp, J. R., 79-2014 (2.9) Felice, G., 79-2812 Felkey, J. R., 79-2248 Fellner, P., 79-351 Fellows, P. M., 79-1981 Fenn, P. M., 79-2402, 3386 Feoktistov, Yu. V., 79-1054 Féraud, J., 79-3475 Ferguson, A. K., 79-673, 1721 Ferguson, C. C., 79-4298 Ferguson, C. W., 79-2450 Ferguson, I. F., 79-3349 (32)

Ferguson, J., 79-1718 Ferguson, R. B., 79-2140 Fernandes, C. A. C., 79-1687 Fernandez, M., 79-2014 (1.2) Fernandez Alvárez, T., 79-1079 Fernandez-Marcos, M. L., 79-3281 Fernando, Q., 79-2168 Ferrand, A., 79-3531, 3533 Ferrandes, R., 79-3443 Ferrante, M. J., 79-1338 Ferrara, G., 79-1951 Ferraris, G., 79-207, 208 Ferreira, C. A., 79-2206 Ferret, J.-C., 79-3198 Ferrini, V., 79-1463 Ferry, J. M., 79-2419, 2499 Fettel, M., 79-2187 Fettes, D., 2918 Fiermans, L., 79-3400 Fijał, J., 79-3285, 3288, 4108 Filhol, A., 79-208 Filimonova, L. E., 79-742 Filizova, L., 79-377 Filleux, C., 79-3960 Findlay, K. W., 79-403 Findlay, R. H., 79-774 Finger, L. W., 79-140, 145, 160, 355, 940, 1270, 2474, 3353, 3369, 3591, 3684 Fink, H.-P., 79-3349 (53) Fink, L. K., Jr., 79-34 Finkel, R. C., 79-2474 Finkelman, R. B., 79-1646 Finkelstein, N. P., 79-946 Finkenwirth, A., 79-4140 Finlow-Bates, T., 79-2155 Finnemore, S. H., 79-2158 (28) Finnerty, A. A., 79-3686 Finnerty, T. A., 79-244 Finney, J. L., 79-3349 (54) Fireman, E. L., 79-3959 Firfarova, I. B., 79-327 Fischer, R., 79-188 Fischer, R. P., 79-3502 Fischer, T., 79-972 Fischer, W., 79-2087 Fischer, W. R., 79-2064 Fischer, D. W., 79-1683, 2588 Fisher, D. E., 79-1368, 2004 Fisher, G. C., 79-1790 Fisher, G. W., 79-2263 Fisher, J. B., 79-2505 Fisher, J. R., 79-3557 Fisher, M. J., 79-1944 Fisher, R. L., 79-3827 Fitzpatrick, E. A., 79-3191 Fitzpatrick, R. W., 79-2034 Flamini, A., 79-391, 3683 Flanagan, F. J., 79-2628 Flank, W. H., 79-3276 Flatt, A. G, 79-4257 Fleck, R. J., 79-3164 Fleet, M. E., 79-2383, 2383a, 3722 Fleischer, M., 79-1587, 2873, 4105 Fleischer, R. L., 79-2451, 3141 Fleischman, W., 79-426 Fleitout, L., 79-1922 Flerov, G. B., 79-1406 Fletcher, T. P., 79-881 Floran, R. J., 79-934, 2728,

2741-2743, 2745

Funk, H., 79-3955

Furst, M., 79-2723

Furbish, W. J., 79-476, 693

Furnes, H., 79-2907, 4237

Florenski, P. W., 79-1580 Florenskiy, I. V., 79-2936 Florenskiy, P. V., 79-2936 Florensky, C. P., 79-3931, 3974 Floyd, R., 79-4254 Fluck, P., 79-1886 Flükiger, R., 79-194 Flynn, R. T., 79-1275 Fodor, B., 79-2007 (11) Fodor, R. V., 79-3985 Foit, F. F., Jr., 79-3711 Foland, K. A., 79-1965 Folger, D. W., 79-1260 Folk, R. L., 79-886, 2975 Fonarev, V. I., 79-2394 Font, R. G., 79-3295 Fontan, F., 79-2871 Fontanella, J., 79-715 Fontugne, M., 79-1452 Foord, E. E., 79-659, 938, 1305, 1655, 2501 Forbes, B. G., 79-1844 Forbes, W. C., 79-2390 Force, E. R., 79-1163, 1164, 1168, 3497 Force, L. W., 79-1092 Forcella, F., 79-4240, 4241, Ford, A. B., 79-797, 849, 1675 Ford, C. E., 79-1318, 3223, 3576, 3668 Ford, D. C., 79-422 Foreman, D. W., Jr., 79-210 Forgáč, J., 79-3812 Fornari, M., 79-3475 Fornes, V., 79-2049 Forsström, L., 79-2170 Forster, R. M., 79-3646, 4180 Fortey, N. J., 79-1170, 1599 Fortune, J.-P., 79-962 Foscolos, A. E., 79-2014 (3.3), 2086 Foster, J. J., 79-1548 Foster, R. P., 79-2158 (8) Fouillac, C., 79-1461, 2585. 3889 Fountain, J. C., 79-3835 Fouquet, Y., 79-961 Fournier d'Albe, E. M., 79-2953 Fowler, J. D., 79-313 Fox, J. S., 79-1482 Fox, K. F., Jr., 79-4161 Fox, P. J., 79-2988, 3136 Fox, R. L., 79-3326 Frache, R., 79-1992, 3213 Framson, P. E., 79-237 Franchini-Angela, M., 79-207 Francis, C. A., 79-1104 Francis, E. H., 79-1056 (4.1) Francis, G., 79-1909, 2881 Francis, P. W., 79-1031, 2503, 2954, 3837 Francis, S., 79-1906 Frangipane, M., 79-4232 Frangipane-Gysel, M., 79-1415 Frankevich, I. N., 79-2334 Frank-Kamenetskü, V. A., 79 362, 1113 Franklin, W. T., 79-1084 Franks, S. G., 79-3310 Fransolet, A.-M., 79-2777, 4039 Frantz, J. D., 79-278, 3582, 3583, 3681 Franz, E.-D., 79-1321

Franzini, M., 79-4026 Fraser, A. R., 79-1086, 2014 (6.7), 3265Fredi, P., 79-606 Freeland, H. R., 79-4385, 4386 Freeman, J. W., 79-562 Freeman, M., 79-4359 Freestone, I. C., 79-258, 3624-3626, 3692 Freeth, S. J., 79-3127 Freidrichs, H. A., 79-2289 French, B. M., 79-769 French, N. R., 79-3699 Frenkel, H., 79-100 Frenkel, M., 79-2014 (7.6) Frenzel, G., 79-2739 Freund, F., 79-1313 Frey, E., 79-2014 (2.4) Frey, F., 79-3349 (65, 66) Frey, F. A., 79-845, 1280 Frey, M., 79-4309 Freyer, H. D., 79-1456 Frick, U., 79-640-642, 2572, Friderichsen, J. D., 79-8 Friedman, G. M., 79-3555, 3556, 4271 Friedman, I., 79-451 Friedrichsen, H., 79-1446, 2468, Friel, J. J., 79-1559, 3971, 3972 Fiese, G., 79-53 Frink, C. R., 79-2063 Fripiat, J. J., 79-1073, 1078 Fripp, R. E. P., 79-2901 (6) Frisch, T., 79-1584 Frith, R., 79-19 Frith, R. A., 79-19 Fritz, B., 79-1420 Froese, E., 79-3053 Froidevaux, C., 79-1922 Frost, B. R., 79-664 Fruchter, J. S., 79-3950 Fruland, R. M., 79-2687, 3914, 3924, 3985 Fruneau, M., 79-3878 Frutos Martinez, M. I., 79-1366 Fry, B., 79-2449 Fryburg, G. A., 79-1329 Fryer, B. J., 79-772, 2446, 2496, 3208, 3492, 3493, 3852, 3853 Fryer, J. R., 79-2132 Fu, L., 79-2196 Fuchs, Y., 79-1205 Fuenzalida, R., 79-1030 Fuge, R., 79-1049, 3807, 3899 Fujii, N., 79-413 Fujii, T., 79-2375, 3588 Fujiki, Y., 79-2354 Fujimoto, K., 79-3782 Fujino, K., 79-1106 Fujisaki, Y., 79-384, 392, 3775 Fujita, K., 79-990 Fujiwara, T., 79-1656 Fujiyoshi, A., 79-4319 Fukuoka, T., 79-639 Fukuyama, H., 79-54 Fulchignoni, M., 79-609-612, Fuller, B. D., 79-2158 (2) Fuller, M., 79-561 Fuller, M. D., 79-2264 Funiciello, R., 79-858 Fung, P. C., 79-1276

Furtado, E. G., 79-1437 Furuyama, K., 79-859 Futa, K., 79-3827, 3833 Fyfe, W. S., 79-408, 1058, 2296, 2297, 2446, 2484, 2539 Fyffe, L. R., 79-804 Fyffe, W. S., 79-3224 Fyson, W. K., 79-1677 Gaal, R. A. P., 79-1364 Gabe, E. J., 79-3349 (14) Gaffey, M. J., 79-533 Gagivev, R. N., 79-2211 Gagosian, R. B., 79-2531, 2557, 3890 Gaines, A. M., 79-1639 Gaines, R. V., 79-1641, 2833, 2870, 4113 Gait, R. I., 79-2845, 4091 Gal, M., 79-2051 Galbiati, B., 79-4239 Galbraith, S. T., 79-2132 Gale, N. H., 79-1943 Galetti, G., 79-2923 Galibin, V. A., 79-2825 Gallagher, M. J., 79-1170, 3232 (6) Galli, E., 79-169, 708, 2121 Gallois, R. W., 79-471, 4255 Galloway, J. N., 79-2241 Galwey, A. K., 79-3064 Galy, J., 79-3415 Gamble, E., 79-2243 Gamble, J. A., 79-4182 Games, L. M., 79-2589 Ganapathy, R., 79-1579 Gandhi, S. S., 79-234 Garanin, A. V., 79-3934 Garcia, A., 79-3697 Garcia, M. O., 79-1772, 3820 Garcia-Blanco, S., 79-198 Garcia Iglesias, J., 79-3531 Gardiner, L. R., 79-2680, 3909 Gardinier, C. F., 79-321 Garg, S. P., 79-320 Garland, T. R., 79-3308 Garn, P. D., 79-1315 Garrote, A., 79-4300 Garson, M. S., 79-1234 Garuti, G., 79-1819, 2806, 4190, 4191 Garwood, G. A., Jr., 79-2048 Gasgnier, M., 79-1314 Gash, P. J. S., 79-525 Gaskin, A. J., 79-2014 (7.2) Gasparini, P., 79-1969 Gasparrini, E., 79-3053 Gasymov, G. B., 79-2133 Gatehouse, B. M., 79-1513 Gattoni, L., 79-918 Gauckler, L. J., 79-311, 1328 Gaudette, H. E., 79-1247, 1259, Gault, D., 79-3947 Gaultier, J.-P., 79-86, 2014 (1.4, Gautam, K. V. V. S., 79-3488 Gauthier, E., 79-3349 (54) Gauthier, J. P., 79-3349 (8) Gautsch, J.-P., 79-3452

Gautschi, A., 79-4142 Gavasheli, A. M., 79-2931 Gaverdovskaya, A. S., 79-3935 Gavini, M. B., 79-1468 Gavrilova, G. S., 79-2144 Gavshin, V. M., 79-2463 Gay, N. C., 79-71 (18), 1583 Gazzoni, G., 79-164 Gbelský, J., 79-4187 Gebauer, D., 79-1949 Gebhard, G., 79-1896, 3092 Gebhardt, J., 79-2007 (12) Gedrovitz, Y. Y., 79-3349 (31) Gee, D. G., 79-771 (10), 778 Geeslin, J., 79-1516 Geffroy, J., 79-3439, 3475 Geis, J. W., 79-1438 Geiss, J., 79-2658, 3922 Geissler, M., 79-53 Gel'man, E. M., 79-662 Genchev, F., 79-2007 (15) Gendler, T. S., 79-1580 Gent, C. A., 79-3447 George, M. C., 79-2062 George, R. G., 79-984 Georgees, C., 79-1218 Geraghty, E., 79-1853 Gerlich, R., 79-3349 (40) Germain, G., 79-214 Gerouki, F., 79-3001 Getting, I., 79-598 Geus, J. W., 79-84 Gezalov, M. A., 79-2133 Gharib, A., 79-1383 Ghatak, S., 79-3754 Ghent, E. D., 79-1240, 1834, 2754 Ghiara, E., 79-3882 Ghiorso, M. S., 79-2819 Ghose, S., 79-202, 675, 1107, 1130, 3349 (47), 3388, 3418, 3973 Ghosh, A. K., 79-2470 Ghosh, K. P., 79-2007 (13) Ghosh, S. K., 79-1433 Giannesini, P.-J., 79-3457 Giardini, A A., 79-717 Gibb, F. G. F., 79-1381, 2275 Gibbs, G. V., 79-2089, 2101, 3334, 3355, 3390, 3709 Gibert, J.-P., 79-3087 Gibling, M. R., 79-1430 Gibson, E. K., Jr., 79-1493, 3215, 3989 Gibson, G. M., 79-3047 Gibson, I. L., 79-1770 Gibson, J. A., 79-2014 (5.3) Gidman, J., 79-1639 Giesy, J. P., 79-2249 Giggenbach, W. F., 79-2574 Gijbels, R., 79-69 (7) Gilat, A., 79-3002 Gilbert, M. C., 79-1858, 3739 Gilje, J., 79-2168 Gilkes, R. J., 79-887 Gill, E. D., 79-3007 Gill, J. B., 79-1277, 3231 (22) Gilles Laflamme, J. H., 79-1632 Gillespie, R. J., 79-3410 Gillet, P. Y., 79-2646 Gillett, S. L., 79-615 Gillette, D. A., 79-419 Gillies, D. C., 79-3195 Gillieson, A. H., 79-2013 (1.5)

illot, P. Y., 79-3155 indy, A. R., 79-437, 2482, 3818 ingrich, D., 79-3915 its-Léon, S., 79-1300 littins, J., 79-4018, 4102, 4157 liuseppetti, G., 79-2122 liven, P. H., 79-3858 Hadsky (Gladski), V. V., 79-3349 (57) Haeser, R., 79-2014 (1.3) Haessner, M. F., 79-1923 Hass, B. P., 79-3999 Flasser, F. P., 79-2388 Headow, A. J. W., 79-16, 1016, 1017 Glebov, M. P., 79-696 Gledhill, A. R., 79-8, 3159 Gleeson, C. F., 79-1483 Glen, H. W., 79-1242 Glenn, M. F., 79-3134 Gliblin, A. M., 79-1323 Glidewell, C., 79-167 Gover, E. D., 79-1051 Glover, J. E., 79-4268 Gover, L., III, 79-1858 Glover, R. B., 79-1762 Gluskoter, H. J., 79-1439, 1807, 3008 Göbel, R., 79-2714 Göcke, W., 79-3349 (53) Godinho, M. M., 79-3199, 4184 Godwin, C. I., 79-3491 Goetze, C., 79-1302 Goertzen, J. O., 79-100 Goguel, R., 79-2568 Goilo, E. A., 79-2014 (1.5) Goins, N. R., 79-544 Gokcen, N. A., 79-3627 Gold, T., 79-600, 2650, 3953 Goldberg, E. D., 79-2243, 3552 Goldbery, R., 79-1236 Golden, D. C., 79-3320, 3321 Goldhaber, M. B., 79-1162, 4071 Golding, L., 79-416 Goldman, D. S., 79-1594, 1595, 2567, 3365, 3372 Goldstein, J. I., 79-624, 1504, 1559, 3971, 3972, 3994 Goloshchukov, M. M., 79-4065 Golub, L. M., 79-3349 (60) Golubev, V. S., 79-3021 Golubic, S., 79-1441 Gomesheva, G. S., 79-683 Gomes, C. B., 79-1569 Gomez-Pugnaire, M. T., 79-4302 Goncharov, G. N., 79-148 Goncharov, Yu. I., 79-2395 Gonschorek, W., 79-3349 (17) Gonsiewski, J. J., 79-608 Gonzalez, E., 79-238 Goode, A. D. T., 79-796, 1843 Goodfellow, R., 79, 1441 Goodfellow, W. D., 79-1412 Gooding, J. L., 79-2660 Goodheart, B. A., 79-3460 Goodman, B. A., 79-1081, 2014, (1.6, 6.8), 3265Goodney, D. E., 79-3850 Goossens, P. J., 79-2185 Gopalan, K., 79-566 Gorai, M., 79-1938, 2982 Gordeyeva, V. I., 79-2827 Gordienko, V. V., 79-662, 4046

Gordos, P., 79-2007 (12) Gore, R. Z., 79-805 (4) Gorelik, Z. A., 79-3130 Gorichon, A., 79-2177 Gorshkov, A. I., 79-2014 (1.5), 4084, 4085 Gose, W. A., 79-3913, 3925 Gostelow, T. P., 79-3129 Goswami, J. N., 79-566, 567 Goto, M., 79-2126 Goto, S., 79-3378 Gottardi, G., 79-1620, 2121 Gottesmann, B., 79-681 Goudie, J. C., 79-1220 Goudvis, R., 79-2624 Gough, D. I., 79-997 Goulart, E., 79-2191 Gould, J. L., 79-1904 Gould, K. W., 79-2521 Gove, H. E., 79-3 Govindaraju, K., 79-1995, 2612, 2632, 3903, 3904 Govinda Rajulu, B. V., 79-3300 Govorov, I. N., 79-1070 (II.2), 2935 Gower, C. F., 79-1669 Gozzard, J. R., 79-2221 Grabowsky, K., 79-2007 (14) Grachev, V. I., 79-1570 Grade, J., 79-2081 Graeser, S., 79-4380 Graf, D. L., 79-474 Graf, H. A., 79-3349 (18) Graf, J. L., Jr., 79-2448 Graham, A. L., 79-4077 Graham, A. M., 79-3207 Graham, B. W., 79-1425 Graham, C. M., 79-3229, 3580, 3703-3706, 3738, 4028 Graham, D. G., 79-1409, 2984 Graham, J., 79-2882 Graham, N. M., 79-3234 Graham, R. H., 79-989 Grainger, P., 79-2062 Gramaccioli, C., 79-1640, 4372 Granath, G., 79-3448 Granath, J. W., 79-4326 Grandjean, D., 79-206 Grandstaff, D. E., 79-2367 Grant, P. R., 79-1944 Grant, R. W., 79-3967 Grant, R. W. E., 79-3829 Grapes, R. H., 79-3044, 4028 Grappin, C., 79-3531, 3785 Gratias, D., 79-2280 Gray, C. M., 79-1548, 1956 Gray, D. R., 79-4019 Gray, N., 79-1764 Gray, N. H., 79-2915 Graziani, G., 79-391, 1593, 3068, 3683, 4016, 4017 Greaves, E. D., 79-1986 Grechukina, T. G., 79-2593 Greeley, R., 79-2656, 3947 Green, D. C., 79-17 Green, D. H., 79-508, 845 Green, H. W., II, 79-3605 Green, P. F., 79-2730, 3203 Green, T. H., 79-807, 2372, 3702 Greene, J. C., 79-72 Greenland, D. J., 79-1059, 1059 (1, 4)Greenslate, J., 79-2506

Greenspan, J., 79-1367

Gregnanin, A., 79-685 Gregorio, F., 79-2877, 3515 Gregory, L. P., 79-2261 Grew, E. S., 79-3184 Grey, I. E., 79-1513 Grieve, R. A. F., 79-1941, 2740, 2742 Griffin, J., 79-2243 Griffin, J. J., 79-3552 Griffin, J. R., 79-805 (10) Griffin, T. J., 79-1726 Griffin, W. L., 79-9, 3233 (II.4), 4088, 4321 Griggs, G. B., 79-1253 Grigoriev, D. P., 79-748, 1577 Grigor'yev, N. A., 79-2068 Grill, E. V., 79-1432 Grimani, M. V., 79-1253 Grimanis, A. P., 79-1253 Grimes, D. J., 79-1053 Grimes, D. V., 79-3219 Grinsted, M. J., 79-2450 Grip, E., 79-3232 (3) Gritsik, Y[E]. P., 79-2762 Grögler, N., 79-572, 2658, 3922 Grønlie, G., 79-956 Grönvold, K., 79-1459 Gros, J., 79-2735 Gros, Y., 79-3349 (69) Gross, M. G., 79-71 (7) Grossman, L., 79-1571 Groudev, S., 79-2007 (15) Grove, E. L., 79-2013 Grove, T. L., 79-1497-1500, 1562, 2693, 2694 Grover, G., Jr, 79-895 Groves, D., 79-4268 Groves, D. I., 79-1070 (III.5) Grundmanis, V., 79-2592 Grundmann, G., 79-4087 Grundy, H. D., 79-2106 Grünenfelder, M., 79-1949 Grunhagen, H., 79-1712 Grushkin, G. G., 79-3518 Grütter, A., 79-3968 Gübelin, E., 79-1352, 1359, 2442 Gübelin, E. J., 79-718, 2428, 3769 Gude, A. J., 3rd., 79-1618 Gudmudsson, T., 79-3191 Gueguen, Y., 79-4341 Gueorguiev, G. K., 79-69 (5) Guerin, G., 79-3155 Guérin, H., 79-2477 Guerreiro, S. D. C., 79-4409 Guest, J. É., 79-2955 Guggenheim, S., 79-2387 Guha, R., 79-2363 Guidi, G., 79-1593, 4017 Guidotti, C. V., 79-1602, 1604 Guieu, G., 79-3530 Guigues, J., 79-2176, 2177, 2180 Guillet, B., 79-3893 Guillopé, M., 79-3594 Guimaraes, D. M. C., 79-2146 Guindy, N. M., 79-3264 Guinness, E. A., 79-3943 Guitián-Ojea, F., 79-3281 Gulens, J., 79-2594 Gulkis, S., 79-3236 (15) Gulson, B. L., 79-7, 463 Gundsambu, Ts., 79-1070 (II.1) Gunsalus, R. P., 79-2589 Gunter, A. E., 79-2782

Gunter, W. D., 79-3568 Gunther, P. R., 79-2086 Guo, W., 79-1180 Gupta, G. K., 79-2030 Gupta, K. R., 79-3487 Gupta, R. C., 79-2165 Gupta, V. J., 79-3248 (6), 3249, 3249 (1, 2) Gurewitz, E., 79-1136 Gurney, J. J., 79-3233 (II.1, II.2, II.8, III.2, III.7) Gurov, E. P., 79-650 Guse, W., 79-3700 Guseinov, G., G., 79-2133 Gustafsson, Bo, 79-3148 Gustavson, M., 79-771 (5) Guth, H., 79-3349 (72) Gutmann, J. T., 79-70 (2), 2967 Gvakhariya, G. V., 79-2828 Gwozdz, R., 79-3828 Haapala, I., 79-1070 (III.6)

Haas, J. L. Jr., 79-1298, 3570, 3571 Haddad, M., 79-3430 Hadipour, N., 79-3667 Hadži-Popvić, S., 79-2007 (16) Haenni, R. P., 79-3274 Hafez, K., 79-2517 Haff, P. K., 79-3963 Hafner, S. S., 79-3349 (25) Haga, N., 79-3420 Hageman, L., 79-3255 Haggerty, S. E., 79-1512, 1561, 2655, 2698, 3082, 3233 (II.11, III.4) Hahn, K. R., 79-4215 Hahn, Th., 79-2136, 3349 (1) Hahn-Weinheimer, P., 79-361 Haider, K., 79-3318 Haile, N. S., 79-1776, 4396 Haines, E. L., 79-578 Hajek, B., 79-3117 Hajek, B. F., 79-1082 Hakkinen, J. W., 79-9 Hälbich, I. W., 79-2158 (18) Haldar, S. K., 79-927 Haldorsen, S., 79-878 Hale, C., 79-561 Halenius, U., 79-3358 Hall, A. J., 79-2161 Hall, I. H. S., 79-4167 Hall, J., 79-789 (4), 916 Hall, J. M., 79-3661, 4405, 4412 Hall, K. M., 79-163 Hall, P. L., 79-2014 (2.3) Hall, R., 79-1597 Hall, R. B., 79-3542 Hall, S. R., 79-3406 Hall, W. D. M., 79-796 Hall, W. E., 79-1197 Hallam, A., 79-2990 Hallberg, J. A., 79-416 Hallberg, R., 79-2504 Halley, R. B., 79-42 Halliday, A. N., 79-1056 (2.2), 1946 Halls, H. C., 79-1674 Halpern, M., 79-1030, 1032 Hamilton, D., 79-1884 Hamilton, D. L., 79-69 (4), 2293,

2408, 3625, 3629-3631, 3654,

3657, 3658, 3715

Hamilton, P. J., 79-2476, 2725, 3236 (2) Hamilton-Jones, B. B., 79-497 Hamlyn, P. R., 79-4079 Hammarstrom, J., 79-1613 Hammarstrom, J. G., 79-1545 Hammill, M., 79-4221 Hammond, L. L., 79-3206 Hammonds, L., 79-3349 (32) Hampar, M. S., 79-2099 Hampel, W., 79-3991 Han, T.-M., 79-1311 Hanafi, S., 79-3264 Hanahan, J., Jr., 79-982 Hanazawa, M., 79-1997 Handa, B. K., 79-1467 Handke, M., 79-4095 Handwerker, C. A., 79-1525, 1551, 2696 Hanic, F., 79-3349 (26) Hankin, L., 79-2025 Hanley, P. L., 79-1859 Hannak, W., 79-4140 Hanneman, W. W., 79-404 Hänni, H. A., 79-1892 Hanor, J. S., 79-888 Hanson, G. M., 79-1259 Hanson, G. N., 79-1278 Hapke, B., 79-2650 Harada, K., 79-2884 Harada, S., 79-2864 Harakal, J. E., 79-3176 Harder, H., 79-2191 Hardie, R. B., III, 79-3233 (III.4) Harding, S. C., 79-1429 Hards, N. J., 79-3626 Hare, P. E., 79-495, 3582 Hargraves, R. B., 79-1009 Harkema, S., 79-132 Harland, W. B., 79-771 (2) Harlow, G. E., 79-3983 Harmer, M., 79-3664 Harmon, R. S., 79-422, 2456 Harms, J. C., 79-3236 (10) Harper, N., 79-2245 Harris, A. L., 79-771 (13), 1056 (3.1)Harris, M., 79-3794 Harris, T. B., 79-1257 Harris, W. H., 79-2247 Harrison, C. G. A., 79-1940 Harrison, I. B., 79-3129 Harrison, R. J., 79-4023 Harrison, R. K., 79-1703 Harrison, T. M., 79-3176, 4356 Harrison, W. J., 79-3638, 3639, 3696 Hart, J.'T., 79-3351 Hart, S. R., 79-291, 495 Hartley, M. E., III., 79-873 Hartman, P., 79-2088, 3329 Hartmann, E., 79-3349 (58) Hartmann, W. K., 79-2659 Hartmann-Boutron, F., 79-3349 Hartung, J. B., 79-570 Harvey, P. K., 79-1970, 4298 Hasegawa, K., 79-3294 Hasegawa, T., 79-719 Hasegawa, Y., 79-2354 Haselton, H. T., Jr., 79-2285 Hashimoto, A., 79-3993 Hashimoto, M., 79-930 Hashimoto, S., 79-3044

Haskin, L. A., 79-1508, 2701 Haskin, M. A., 79-1508 Haslam, H. W., 79-2927, 3158, Hassan, F., 79-1634, 1797, 2517, 2720, 3069 Határ, J., 79-4143, 4144 Hatcher, R. D., Jr., 79-771 (20) Hatherton, T., 79-3083 Hatton, C. J., 79-3233 (II.1) Hatzigiannelis, G. J., 79-2007 (17)Haukka, M. T., 79-1052 Haupt, R. S., 79-1260 Haussühl, S., 79-201 Hawes, W., 79-3106 Hawke, B. R., 79-3979 Hawkes, J. R., 79-1376, 1699 Hawkesworth, C. J., 79-494, 2503, 3159 Hawkins, D. B., 79-2606 Hawkins, G. P., 79-3312 Hawley, J. W., 79-419 Haworth, R. T., 79-4368 Hawthorne, F. C., 79-2106, 2140, 3366 Hay, R. G., 79-2966 Hay, R. L., 79-2964 Hay, W. W., 79-71 (16) Hayase, K., 79-2893 Hayashi, C., 79-3778 Hayashi, H., 79-2253 Hayashi, T., 79-2067, 3378 Haytsu, A., 79-3171, 3174 Hayes, G. W., 79-3497 Hayes, J. M., 79-2589 Hayes, M. H. B., 79-1059, 1059 (1, 3), 2014(2.3)Hays, J. F., 79-1499, 2311, 2717, 3988 Hazen, R. M., 79-585, 940, 1270, 1340, 2683, 3353, 3369, 3591, 3684, 4126, 4344, 4358 He, J., 79-3142 Head, J. W., 79-3939, 3945, 3977, 3979, 3981 Head, J. W., III, 79-2666 Healy, J., 79-1762 Hearn, P. P., 79-479 Hearsum, P. G., 79-4257 Heaton, R., 79-1121 Heaton, T. H. E., 79-3229, 3703 Hebeda, E. H., 79-1948 Hebert, H., 79-1100 Hecker, W., 79-410 Heckroodt, R. O., 79-2014 (7.3), 3699 Hédervári, P., 79-69 (6) Hedge, C. E., 79-1740, 2457, 3827, 3833 Heger, G., 79-3349 (72) Hegyi-Pakó, J., 79-4282 Heide, K., 79-1749 Heidecker, E. J., 79-1187 Heier, K. S., 79-9, 449, 956 Heiken, G., 79-3930 Heil, V., 79-3246 Heilmann, H., 79-1401 Heim, M., 79-909 Heimlich, R. A., 79-4215 Heintz, G. M., 79-70 (4) Heinzer, F., 79-3890 Heirtzler, J. R., 79-3236 (13)

Helin, E. F., 79-615

Heling, D., 79-104, 1818 Heller-Kallai, L., 79-93, 2014 (7.6), 2065Hellman, P. L., 79-2372, 3702 Helmberger, D. V., 79-1872, 3236 (16) Helmke, P. A., 79-83, 1996 Helmstaedt, H., 79-905, 1411, 2202, 3233 (IV.2, IV.5) Hellner, E., 79-3349 (28, 40) Helsen, J. N., 79-2473 Helz, G. R., 79-2359 Heming, R. F., 79-3718 Hemingway, B. S., 79-2302, 3557, 3558 Hemley, J. J., 79-2397 Henderson, C. M. B., 79-1119, 2400, 2422, 3640, 4346, 4349, 4350, 4353 Henderson, P., 79-3619, 3806 Henderson, W. G., 79-2958 Hendricks, B., 79-4382 Hendry, H. E., 79-3010 Henkel, H., 79-3188 Henley, R. W., 79-678 Henmi, C., 79-2100, 2766, 2775, 2784 Henmi, K., 79-2100, 2766, 2775, 2784 Henningsmoen, G., 79-787 (2) Henriksen, N., 79-771 (17) Henrick, K., 79-3459 Hensen, B. J., 79-342, 347, 349, 4019 Henshaw, P. C., Jr., 79-4364 Hentschel, G., 79-764, 3089 Hentschel, H., 79-4140 Hepworth, J. V., 79-2192, 2901 Herail, G., 79-3471 Herbert, F., 79-551 Herbillon, A. J., 79-2014 (7.7), Herd, R. K., 79-1677, 4025 Heritsch, H., 79-1831 Herman, L. L., 79-3042 Hermes, O. D., 79-2946, 3233 (V.2)Hermoneit, B., 79-3349 (55) Hermosin, M. C., 79-2014 (2.13) Herndon, J. M., 79-1572 Heroes, Y., 79-2042 Herr, W., 79-2733 Herron, T. J., 79-1927 Hertogen, J., 79-69 (7), 527, 528 Herz, N., 79-937, 1166, 1167 Herzberg, C. T., 79-299, 2383, 2383a, 2384, 3721, 3722 Herzog, G. F., 79-3989 Heseltine, F. J., 79-4295 Hess, H., 79-2138, 2139, 4121 Hesse, K.-F., 79-154, 165 Hess, P. C., 79-1291, 1539, 2314 Hesse, K. F., 79-3349 (27) Heuer, A. H., 79-1327, 1329, 1330 Hewins, R. H., 79-1504, 2732 Hewitt, A. D., 79-3554 Hewitt, J. S., 79-3072 Hey, M. H., 79-1036, 1644, 2878 Heydeman, A., 79-2191 Heyer, H., 79-2834 Heyl, A. V., 79-659 Heyl, M. L., 79-659

Heyse, J. V., 79-630 Hickman, A. H., 79-917, 1014, 1802 Hicks, W. D., 79-3407 Hidasi, J., 79-2007 (18) Hietanen, A., 79-1596 Higgins, A. K., 79-8 Higgins, J. B., 79-3374, 4025 Higgs, R., 79-1682 Highley, D. E., 79-1231, 2014 (3.7, 5.2), 2053 Higuchi, H., 79-2735 Hildreth, R. A., 79-3179 Hill, P. J., 79-1805 Hill, R. J., 79-745, 2089, 3102, 3355, 3412, 3428 Hille, P., 79-1967 Hillyer, J. W., 79-1982 Hilmy, M. E., 79-4195 Hine, R., 79-1725 Hintenberger, H., 79-620, 3908 Hinthorne, J. R., 79-2728 Hinze, E., 79-3660, 4343 Hirano, S., 79-1132 Hirner, A., 79-361 Hirose, M., 79-389 Hirose, T., 79-3275 Hirowatari, F., 79-2892 Hirsch, W. C., 79-2670, 3917 Hiscott, R. N., 79-1680 Hites, R. A., 79-2547 Hjelmqvist, S., 79-4001 Hlava, P. F., 79-2728 Ho, P., 79-2403 Hobbs, P. V., 79-1765 Hoch, M., 79-249 Hochella, M. F., Jr., 79-3709 Hockley, J. J., 79-1847 Hodder, A. P. W., 79-1761, 2262 Hodge, D. S., 79-4163 Hodge, P. W., 79-1579 Hodge, V., 79-2243, 3552 Hodges, F. N., 79-280, 512, 513, 674, 1293 Hodges, R. R., Jr., 79-548 Hodgkinson, A., 79-2443 Hoefs, J., 79-2578, 3792 Hoering, T. C., 79-441, 3569, 3584, 3874 Hoernes, S., 79-1446, 3870 Hoeve, J., 79-1060 (E.1, E.4, E.5) Hoff, D., 79-4383 Hoffer, E., 79-684, 2328, 3870 Hoffman, K. A., 79-960 Hoffman, M. A., 79-1852 Hoffner, D., 79-2043 Hofmann, A., 79-30, 495 Hofmann, A. W., 79-284, 1284, 1286, 1294 Hofmann, F., 79-3473, 4002 Hofmann, J., 79-1848 Hofmeister, H., 79-1531 Hogan, L. G., 79-1018 Hogarth, D. D., 79-4321 Hohenberg, C. M., 79-3920, Hohmann, E. H., 79-2167, 2237 Holcombe, T. L., 79-993 Holdaway, M. J., 79-1857 Holdren, G. R. Jr., 79-2243 Höll, R., 79-971 Holland, H. D., 79-2308, 4044 Holland, R. A. G., 79-40

Iolland, T. J. B., 79-2385 Iollister, C. D., 79-3134 Iollister, L. S., 79-1541, 1542, 2756 Iollister, V. F., 79-1224, 2203 Iolloway, J. R., 79-70 (13), 1274, 3569, 3689 Iollyer, S. E., 79-1232 Iolser, W. T., 79-3843 Iomshaw, L. G., 79-2014 (2.5) Ionda, M., 79-2884, 3998 Ionjo, S., 79-493 Ionma, H., 79-4034 food, A., 79-2587 Tood, L. L., 79-563 Joopes, E., 79-3146 Hoover, J., 79-3632 Hoover, J. D., 79-3635, 3645, 3730, 4176 lopkins, D. M., 79-1019 Hopson, C. A., 79-32-34 Hopson, P. M., 79-3528 Hopwood, T., 79-2158 (3) Horiuchi, H., 79-3408 Horiuchi, N., 79-383 Horiuchi, S., 79-1139, 2126 Horn, E E., 79-420, 3532 Horn, P., 79-3955 Horn, R., 79-3435, 4360 Hornytzkyj, S., 79-3766 Horowitz, H. S., 79-3349 (34) Horr, G., 79-1957 Horrocks, P., 79-2901 (6) Horton, D. J., 79-1185, 1212 Horváth, I., 79-159, 3277, 3280 Horvath, L., 79-3104 Horvath, P., 79-545 Horwitz, R. C., 79-1670 Hörz, F., 79-599, 1507 Hose, H. R., 79-2007 (19) Hosie, D. J., 79-2635 Hossack, J. R., 79-785 Hossner, L. R., 79-3278 Hostetler, C. J., 79-1574 Hostetler, P. B., 79-2360, 2361 Hotz, K., 79-4377 Hou, K., 79-1800 Houck, J. E., 79-3841 Houser, C. A., 79-2 Houska, C. R., 79-183 Housley, R. H., 79-3970 Housley, R. M., 79-2649, 3967 Houston, R. S., 79-3200 Houston, W. N., 79-3231 (10) Hovis, G. L., 79-365, 1610, 3745 Hovorka, D., 79-3810, 3813, 4082 Howald, R. A., 79-3255 Howard, P. F., 79-1820 Howarth, R. W., 79-2242 Howells, S., 79-3720, 3725, 3727 Howie, R. A., 79-732, 899, 2832 Hoyt, W. H., 79-1260 Hristova, J., 79-432 Hsu, N. W., 79-3290 Hsui, A. T., 79-542 Hu, H.-N., 79-2685, 3954 Huang, C., 79-1180 Huang, H., 79-1800 Huang, J., 79-3004 Huang, P. M., 79-2014 (6.5), Huang, T. C. 79-1747 Huang, W.-Y., 79-2549

Hubbard, N. J., 79-574, 2664 Huber, M., 79-1126 Hubert, C., 79-1679 Huckenholz, H. G., 79-2374 Hudson, D. R., 79-416, 4097 Hudson, M. R., 79-2566 Hudson, P. R. W., 79-713 Hudson, T., 79-4155, 4204 Hugg, R., 79-819, 2170 Hughes, J. C., 79-1825, 3284 Hugo, D., 79-2158 (24) Huijbregts, Ch. J., 79-3237 Hull, J., 79-1056 (1.2) Hulme, G., 79-1746 Hume, B. J., 79-3046 Humphreys, J., 79-3595 Humphris, S. E., 79-444 Huneke, J. C., 79-2704, 2713, 3111 Hunter, D., 79-1713 Hunter, D. R., 79-487, 3231 (9) Hunziker, J. C., 79-1007 Hurley, P. M., 79-1964 Hurny, J., 79-4080, 4375 Husebye, E. S., 79-787 (5) Huss, G. R., 79-1564 Hussain, S., 79-795 Hussain, S. B., 79-112 Hussain, S. M., 79-885 Hutcheon, I., 79-2782 Hutchinson, R. W., 79-3492 Hutton, D. R., 79-161, 3776 Hutton, L. J., 79-1216 Hvožďara, P., 79-4144 Hybler, J., 79-3349 (22)

Hyde, B. G., 79-177, 1103

Hyndman, R. D., 79-4402

Hynes, D. L., 79-2613

Iannelli, T. R., 79-800 Ibrahim, A.-B. K., 79-545 Ichikawa, M., 79-3345 Iden, I. K., 79-9 Ido, M., 79-691 Iglesias, J. E., 79-195 Ignatov, I. S., 79-2847 Ihlen, P. M., 79-787 (7, 11) Iijima, S., 79-1114, 1137 Ishi, K., 79-173, 2366, 2412, 3357 Iiyama, I., 79-443 Iizumi, S., 79-2982 Ikeda, Y., 79-843 Ikorski, C. V., 79-1061 Il'inskii, G. A., 79-723 Illguth, A., 79-2136 Ilupin, I. P., 79-721, 2786 Ilyuchin (Ilyukhin), V. V., 79-3349 (50) Imai, N., 79-3462 (2) Ineson, P. R., 79-3153 Ingamells, C. O., 79-2634, 2645 Ingham, J. K., 79-1056 (3.4) Ingram, B. L., 79-4081 Innocenti, F., 79-4242 Ioffe, P. A., 79-748, 3349 (62) Iorysh, Z. I., 79-2129 Ip, W.-H., 79-531 Iqbaluddin, 79-4393 Irvine, T. N., 79-411, 412, 851, 3589, 3730, 4175, 4205 Irving, A. J., 79-1279, 1280, 1518, 1543 Irving, E., 79-1000, 1930, 4400

Isaacs, A., 79-4124 Isaacs, J. D., 79-1393 Isayeva, A. B., 79-1423 Ishiguro, T., 79-1132 Ishihara, S., 79-1070 (1.3, III.7, HII.15), 2489, 4201, 4285 Ishii, T., 79-2350, 2792 Ishioka, K., 79-4245 Ishizaka, K., 79-462 Ismail, M. G. M. U., 79-1132 Isnard, P., 79-1706 Isobe, M., 79-138 Isokangas, P., 79-3232 (2) Israili, S. H., 79-3249 (14) Issler, R. S., 79-1687 Itaya, T., 79-2848 Itihara, Y., 79-4034 Ito, H., 79-116 Ito, J., 79-770, 1652, 2091, 2876, 3366 Ito, K., 79-1771 Ittyachen, M. A., 79-1344, 3071 Ivanov, A., 79-3246 Ivanov, A. V., 79-3931 Ivanov, I., 79-651 Ivanov, I. M., 79-833 Ivanov, I. P., 79-2394 Ivanov, O. K., 79-755 Ivanov, V. V., 79-1427 Ivanova, G. F., 79-1070 (IV.3) Ivarson, K. C., 79-360 Ives, L. K., 79-2724 Iwai, S., 79-203, 204, 1145, 2112 Iwata, M., 79-2350 Ixer, R. A., 79-2172 Izawa, M., 79-2858 Izzeldin, Y., 79-4360

Jackson, A. A., 79-1663 Jackson, G. D., 79-800 Jackson, I., 79-319, 3941 Jackson, I. A., 79-3831 Jackson, K. S., 79-1458 Jackson, M. L., 79-82, 419, 1996, 2014 (6.4), 2534 Jackson, M. P. A., 79-3036 Jackson, M. R., 79-2498 Jackson, N. J., 79-1701, 1817, 3163 Jackson, T. A., 79-2239 Jacob, R. E., 79-2158 (27), 2594 Jacobs, J. W., 79-1508, 1547 Jacobsen, F. L., 79-3232 (5) Jacobson, R. R. E., 79-836 Jacobsen, S. B., 79-1442 Jaffe, E., 79-1685 Jaffe, H. W., 79-1854, 2785 Jaffe, J., 79-1685 Jaffrezic, H., 79-2000 Jäger, H., 79-2013 (2.1) Jagodzinski, H., 79-3349 (10, 65, 66) Jagoutz, E., 79-1531, 3233 (V.3) Jahn, B.-M., 79-931, 2745 Jain, A. K., 79-3486 Jain, S. K., 79-1158 Jain, V. K., 79-947 Jakabská, K., 79-3194, 4007 Jakeš, P., 79-541 Jakob, W. R. O., 79-3233 (III.2) Jakobsen, B. M., 79-786 Jakobsson, S. P., 79-446, 2951 Jambor, J. L., 79-120, 232 James, D. E., 79-460, 461, 874

James, H. E., 79-2016 James, H. L., 79-1003 James, O. B., 79-1545, 1546, 1549 Jamieson, B. G., 79-2324 Jamieson, H. E., 79-2752 Jamil, A. K., 79-2581, 2582 Jan, M. Qasim, 79-2771 Janecek, J. J., 79-325 Janeczek, J., 79-4036 Jangpangi, B. S., 79-3248 (10) Janković, S., 79-2186 Janovec, V., 79-3349 (7) Jansen, H., 79-2901 (8) Jansen, J. B. H., 79-657, 1837 Janssen, T., 79-3349 (13) Janssens, M.-J., 79-527, 528 Jaros, J., 79-3248 (9) Jarosewich, E., 79-1569 Jarvis, D. M., 79-1184 Jasiński, A., 79-1325, 2850 Jasiolek, G., 79-3349 (62) Jaujou, M., 79-3452 Jaulmes, S., 79-190 Javoy, M., 79-443 Jawad, Ali, A., 79-2993 Jayasinghe, N. R., 79-3169 Jeanloz, R., 79-3941 Jeans, C. C., 79-101 Jecko, G., 79-2614, 2627, 2629, 2639, 2641 Jedwab, J., 79-2240 Jefferson, D. A., 79-157 Jeffery, D. H., 79-4151 Jeffery, J. W., 79-3399 Jeffrey, J. W., 79-1131 Jeffrey, L. M., 79-2553 Jeitschko, W., 79-196 Jena, P. K., 79-1158 Jeng, W.-L., 79-2449 Jenkins, D. A., 79-3327, 3328 Jenkins, D. M., 79-3642 Jenner, G. A., 79-2496 Jensen, D. E., 79-1900 Jensen, E. S., 79-787 (10) Jensen, K. J., 79-2706 Jeschofnig, P., 79-4231 Jessberger, E. K., 79-1550 Jessup, R. E., 79-273 Jezek, P. A., 79-459, 769, 863, 2490 Jhingran, A. G., 79-4395 Jiang, X., 79-1800 Jiménez-López, A., 79-2050 Jin, C., 79-2938 Jobbins, E. A., 79-393, 394, 1350 Jobson, A. M., 79-2580 Jocelyn, J., 79-1005 Jochum, K. P., 79-620 Jøgensen, P., 79-2014 (3.5) Johan, Z., 79-2890, 3065 Johannes, W., 79-246, 2399 Johansen, O., 79-3898 Johansson, G., 79-3148 Johns, W. D., 79-3236 (8) Johnsen, O., 79-3375 Johnson, C. C., 79-1049, 3899 Johnson, D. A., 79-3944 Johnson, H. D., 79-1056 (3.1) Johnson, H. P., 79-986 Johnson, J., 79-2673 Johnson, J. N., 79-1264 Johnson, L. R., 79-689, 3234

Johnson, M. E., 79-3236 (18)

Johnson, M. R. W., 79-771 (13), 1056 (2.2), 3150 Johnson, R. F., 79-1786 Johnson, T. C., 79-2256 Johnson, T. V., 79-71 (6), 579-581 Johnston, C. W., 79-3102 Johnston, I. J., 79-3729 Johnston, J. H., 79-2960 Jonassen, I. R., 79-1458 Jonasson, I. R., 79-418 Jones, B., 79-1430 Jones, D. L., 79-1021 Jones, F. G., 79-3011 Jones, G. C., 79-1047, 1143 Jones, G. H. S., 79-3938 Jones, J. A., 79-1070 (III.3) Jones, K. A., 79-3064 Jones, L. E. A., 79-4338 Jones, L. M., 79-3836 Jones, M. E., 79-3593 Jones, M. P., 79-1986 Jónsson, J., 79-2951 Jordan, H., 79-2205 Jordan, T. H., 79-3233 (I.1) Jordanov, J., 79-307, 651 Jørgensen, B. B., 79-3848 Joron, J. L., 79-2000, 2974 Joshi, M. S., 79-1344 Jost, K. H., 79-153 Joswig, W., 79-205, 3349 (42, 64), 3401 Joubert, J. C., 79-326 Joubert, P., 79-2158 (14) Journel, A. G., 79-3237 Jovanovic, S., 79-529, 554, 2706, Juan, V. C., 79-3823, 4054, 4317 Juhász, Á., 79-2007 (20) Julg, A., 79-944 Jull, A. J. T., 79-2680, 3964 Jungck, M., 79-3922

Junge, C. E., 79-2509 Jurek, K., 79-3246 Just, J., 79-2878 Kabalkina, S. S., 79-3349 (67) Kabesh, M. L., 79-4195 Kaemmel, T., 79-53 Kadi-Hanifi, M., 79-158, 2114 Kagami, H., 79-1938, 2982 Kaiman, S., 79-1060 (B.1) Kajima, M., 79-4202 Kajiwara, Y., 79-3462 (7) Kalezić, M., 79-2007 (10) Kaličiak, M., 79-2224, 3157 Kaličiaková, E., 79-2224 Kalinin, D. V., 79-2373 Kallemeyn, G. W., 79-1533, 1575 Kallio, P., 79-1983 Kalsbeek, F., 79-6, 1939 Kalt, A., 79-2014 (6.3) Kalugina, E. V., 79-742 Kalus, C. K., 79-3349 (19) Kalvoda, J., 79-3248 (9) Kamencev, I. E., 79-3347 (45) Kamineni, D. C., 79-2761, 3051 Kamenický, L., 79-1070 (III.14) Kamenov, B., 79-306

Kan, T. K., 79-1927

Kanazawa, Y., 79-3403

Kanaris-Sotiriou, R., 79-1381

Kanegaonkar, N. B., 79-2486

Kaneoka, I., 79-12, 3143 Kanisawa, S., 79-686, 2487, Kaperskaya, Yu. N., 79-1450 Kaplan, I. R., 79-2558, 3843, Kaprálik, I., 79-335 Karageorgiou, E. K., 79-69 (20) Karasev, I. N., 79-2560 Kardos, L. T., 79-3315 Karig, D. E., 79-1924 Karimian, N., 79-3322 Karlsson, W., 79-2014 (3.5) Karnov, I. K., 79-2447, 2453 Karpenkov, A. M., 79-762 Karpinsky, O. G., 79-3349 (49) Karpov, I. K., 79-2266 Karup-Møller, S., 79-2849, 4098 Karwowski, L., 79-453 Kasen, M. B., 79-2724 Kashaev, A. A., 79-1110, 3370 Kashima, N., 79-930 Katkins, U., 79-805 (5) Kato, A., 79-687, 734, 930, 1656, 2860, 4027 Kato, C., 79-3257, 3261, 3294 Kato, K., 79-174 Kato, M., 79-3674 Kato, T., 79-2818, 2892, 3420 Katto, J., 79-930 Katz, M. B., 79-991 Kaula, W. M., 79-536 Kavanagh, B. V., 79-2039 Kawabe, I., 79-1296 Kawachi, Y., 79-695 Kawahara, A., 79-2100 Kawai, N., 79-248, 2276 Kawalec, B., 79-1315 Kawano, T., 79-80 Kay, J. R., 79-1214 Kayupova, M. M., 79-2837 Kazachenko, V. T., 79-3517 Kazanskaya, E. V., 79-2130 Kazarinov, L. N., 79-2929 Kazenkina, G. A., 79-2560 Kazim, L. A., 79-2266 Kearns, L. E., 79-3107, 3116 Keats, W., 79-4151 Keays, R. R., 79-1774, 2524, 4079 Keefer, K. D., 79-2116 Keeling, J. L., 79-390 Keen, C. E., 79-1681, 4402, 4404 Keidel, F. A., 79-977 Keihm, S. J., 79-546 Keil, K., 79-1494, 1521, 1558. 1564, 1565, 1569, 2648, 2660, 2686, 2689, 2700, 2728, 3928, 3983, 3985, 4035 Keisling, T. C., 79-273 Keith, J. E., 79-574, 2664 Keith, T. E. C., 79-864, 4227 Kelker, D., 79-1045 Kekulawala, K. R. S. S., 79-3749 Keller, A., 79-3344 Keller, J., 79-1755 Keller, P., 79-2138, 2139, 4121 Keller, W. D., 79-2014 (7.1), 2059, 3274 Kelliher, W. C., 79-1564, 1565 Kelling, G., 79-771 (15) Kellogg, W. W., 79-3236 (4) Kelly, W. C., 79-2888, 4124

Kemp, A. L. W., 79-2245 Kempe, D. R. C., 79-926, 3234 Kendall, A. C., 79-753 Kennan, P. S., 79-1172 Kennard, C. H. L., 79-128 Kennedy, E. J., 79-241 Kennett, J. P., 79-3850 Kennon, N. F., 79-3238 Kent, P. E., 79-1056 (4.3) Kepezhinskas, K. B., 79-3040 Kepezhinskas, V. V., 79-2934 Kerkkonen, O., 79-819 Kern, H., 79-4355 Kerr, J. W., 79-799, 1193, 1195, 3495 Kerrich, R., 79-1191, 2446, 2484, 3027, 3197, 3208, 3492, 3493 Kerridge, J. F., 79-3961, 3992 Kerry, K., 79-2525 Keshav Rao, V., 79-884 Keskinen, M., 79-3701 Kesler, S. E., 79-3836, 4247 Kessaissia, S., 79-1075 Kessels, H. J., 79-3146 Kesson, S. E., 79-538, 540 Ketru, P. N., 79-1344 Keute, J. C., 79-132 Key, R. M., 79-2901, 2901 (4), 2902, 3880 Khadzhi, I. P., 79-2395 Khailov, A. D., 79-2144 Khaled, K. A., 79-1798 Khalichman, V. M., 79-3349 (77) Khalikov, A. D., 79-2104 Khalil, J., 79-1797 Khalil, M. M., 79-4195 Khalil, S. O., 79-1397, 2482, 3818 Khan, N. A., 79-81 Khan, P., 79-81 Khan, S., 79-3296 Khanna, P. K., 79-89 Khare, L. R., 79-2342 Khel'vas, I. G., 79-3518 Khisina, N. R., 79-3201 Khomyakov, A. P., 79-2104, 2265, 2886 Kidd, R. B., 79-423 Kieffer, H. H., 79-1566 Kienast, J.-R., 79-4243 Kiesl, W., 79-1402 Kiflawi, I., 79-1859 Kigai, I. N., 79-1070 (IV.4) Kihara, K., 79-2135, 3391, 3392 Kikuchi, T., 79-2124 Kilinc, I. A., 79-3653 Kiline, M., 79-3534 Kilius, L., 79-3 Killeen, P. G., 79-449 Kimbara, K., 79-2057 Kimberley, M. M., 7 1060 (A.3, D.4), 3800 79-1060, Kincheloe, N. K., 79-3937 Kinder, J., 79-2721 Kindermann, B., 79-1142 King, B. C., 79-771 (11) King, D. T., Jr., 79-46 King, H., 79-3669 King, M. S., 79-3074 Kingery, F. A., 79-3248 (8) Kingsley, R. H., 79-2970 Kinnaird, J. A., 79-1177 Kinnes, I. A., 79-4023

Kipfer, A., 79-4376, 4378 Kirby, S. H., 79-3066, 3601 Kirchner, E., 79-4117 Kirchner, E. C., 79-3096, 3097 Kirensky (Kirenski), L. V., 79-3349 (51) Kirfel, A., 79-3660 Kirikov, V. A., 79-3349 (57) Kirkham, R. V., 79-433 Kirkman, J. H., 79-2076 Kirkpatrick, R. J., 79-1764, 2318 Kirov, G., 79-376-378 Kirschvink, J. L., 79-992, 1904 Kirsten, T., 79-1550 Kiskyras, D., 79-2007 (23) Kiskyras, D. A., 79-2007 (22, 24) Kislitsina, V. P., 79-1070 (IV.11) Kissin, S. A., 79-4114 Kistler, R. W., 79-3834 Kitajima, K., 79-94, 3740 Kitch, R. B., 79-1184 Kitsul, V. I., 79-2565 Kittrick, J. A., 79-88, 2302 Klages, M. G., 79-3311 Kłapyta, Z., 79-3289 Klaska, K.-H., 79-1105 Klasner, J. S., 79-3539 Klein, C., 79-1849 Klein, L. C., 79-1525, 1551 Klein, P., 79-1402 Klein, R. L., 79-1438 Klein, T., 79-4162 Klemm, D. D., 79-269, 1830 Kleppa, O. J., 79-1333, 2300 Klerkx, J., 79-69 (7) Kliem, W., 79-3379 Kliger, L., 79-2051 Klinčeková, M., 79-3812 Klootwijk, C. T., 79-4414 Kluger, F., 79-1402 Knauth, L. P., 79-1448, 1757, 4249 Knebel, H. J., 79-1808 Knecht, B., 79-1528 Knedler, K. E., 79-2960 Knight, R. J., 79-3231 (18) Knöll, H.-D., 79-1515 Knorn, H., 79-824 Knorring, O. von, 79-2810 Knowles, C. R., 79-331 Knox, G. W., 79-2608 Knox, R. W. O'B., 79-2961, 4219 Knudsen, T., 79-271 Ko, H. C., 79-1338 Koark, H. J., 79-3149 Kobatashi, K., 79-4000 Kobayashi, H., 79-4118 Kobe, H. W., 79-1390 Koch, E., 79-2087 Koch, K., 79-106 Kochhar, N., 79-3249 (26) Kocurko, M. J., 79-4281 Kogarko, L. N., 79-1272, 1273 Kohlmann, A., 79-679 Koide, M., 79-1265, 2243, 2538, 3552 Koishi, Y., 79-3195 Koivula, J. I., 79-2441 Koivumaa, S., 79-2170 Koizumi, M., 79-3753, 3762 Kojima, S., 79-2056 Kolb, E. D., 79-951

Kolesar, P. T., 79-122, 1635 Kolenko, L. I., 79-2068 Kolesnik, Yu. N., 79-941 Kolesov, G. M., 79-3934 Koljonen, T., 79-428, 501, 3830 Koller, F., 79-973, 4087 Kolmer, H., 79-2644 Kolobyanina, T. N., 79-3349 (67)Kolontsova, E. V., 79-2416 Kolsaker, P., 79-484 Komar, P. D., 79-875 Komarneni, S., 79-90 Komatsu, H., 79-400 Komhyr, W. D., 79-1257 Komlóssy, G., 79-1179 Kondakova, S. V., 79-2485 Kondo, R., 79-94, 3378, 3740 Konev, A. A., 79-730, 731, 901 Konev, A. S., 79-1054 Konig, R. H., 79-2535 Konishi, S., 79-2251 Konnert, J. A., 79-1144 Konnert, J. H., 79-1118 Konno, H., 79-4013 Konstant, Z. A., 79-3349 (31) Konta, J., 79-2014 (7.4) Kontopoulos, N., 79-4261 Koons, R. D., 79-83 Kopaczewska, E., 79-1617 Kopp, O. C., 79-245 Koppelman, M. H., 79-2014 (2.6)Kopyatkevich, I. R., 79-1070 (IV.11) Korekawa, M., 79-1612, 3349 (42)Korhonen, K. T., 79-3766 Korina, M. I., 79-3935 Koritnig, S., 79-4140 Korneev, A. E., 79-2416 Kornfält, K.-A., 79-4178 Kornprobst, J., 79-4243 Korowski, S. P., 79-3100 Korytkova, E. N., 79-358 Korzhinskii, A. F., 79-1374 Korzhinskii, D. S., 79-409, 442, 3586 Korzhinzkii, A. F., 79-3790, 3791 Kosals, Ya. A., 79-2827 Koshlyakov, M. N., 79-71 (21) Koster van Groos, A. F., 79-3690 Kostiner, E., 79-213 Kostov, I., 79-1153 Kostyleva-Labuntsova, E. E., 79-1061 Kosyak, E., A., 79-742 Koto, K., 79-3403 Kotov, N. V., 79-362 Kotov, V. I., 79-256 Kovac, J. P., 79-3125 Kovach, A., 79-1964 Kovach, J., 79-481 Kovacs, M.-P., 79-3604 Kovalenko, V. I., 79-1070 (III.8) Kovalenko, V. S., 79-2395 Koyama, K., 79-172 Koyanagi, R., 79-2966 Kozdyra, Z., 79-2084 Kozhouharov, D., 79-923 Kozhouharova, E., 79-923 Kozireva, L. B., 79-1061

Kozlov, V. D., 79-1070 (III.9, III.14) Kozlowski, A., 79-3247 Krähenbühl, U., 79-2658, 3968 Krajewski, A., 79-3431 Kramer, B., 79-3349 (20) Kramer, E., 79-741 Kramers, J. D., 79-2472 Kranold, R., 79-3349 (53) Kranz, G., 79-3349 (75) Krasnykov, B. B., 79-3349 (31) Kraus, I., 79-3301 Krause, F. F., 79-3009 Krause, H., 79-824, 1169 Krautz, E., 79-1976 Kreiliger, J., 79-1907 Kreitler, C. W., 79-3891 Krejci-Graf, K., 79-2583 Krendelev, F. P., 79-2193 Kreulin, R., 79-3780 Krezoski, J. R., 79-2505 Krigman, L. D., 79-1272 Krinsley, D. H., 79-1966 Krishnam Raju, K., 79-3522 Krishna Murti, G. S. R., 79-114, 2074 Krishnamurthy, R. V., 79-3165 Krishnaswami, S., 79-424, 2474 Krishnaswamy, P., 79-2156 Kristiansen, R., 79-4088 Krištin, J., 79-4080, 4082, 4336, 4375 Kristmannsdóttir, H., 79-2014 (4.3)Krivovichev, V. G., 79-255, 4046 Kroener, A., 79-2901 (2) Krogh, E. J., 79-9 Krogh, T. E., 79-22-24 Kroll, H., 79-1117 Krom, M. D., 79-1455 Kromer, H., 79-1094 Kronberg, B. I., 79-2539 Kronev, A., 79-2158 (11), 3162, 3163 Kroopnick, P. M., 79-3850 Krough, T. E., 79-7 Krouse, H. R., 79-1240 Kroužek, E., 79-398 Krstulović, R., 79-2007 (25) Krueger, H. W., 79-805 (3) Krule, Z., 79-2007 (26) Krummenacher, D., 79-3248 (8) Krupka, K. M., 79-3558 Krupp, H., 79-2769 Kruse, H., 79-535, 1531 Kubaschewski, O., 79 2269 Kubat, I., 79-3453 Kubát, J., 79-2268 Kubin, L., 79-4049 Kubo, K., 79-844 Kubová, J., 79-3810 Kubranová, M., 79-3280 Kucab, M., 79-3349 (2) Kucha, H., 79-4089, 4090 Kuckes, A. F., 79-1877 Kudoh, Y., 79-3371 Kudryashov, A. V., 79-1070 (II.4)Kudryashova, A. F., 79-3935 Kuhn, J. K., 79-242 Kühn, R., 79-2862 Kuhnel, R. A., 79-2199 Kuijper, R. P., 79-2749 Kukharenko, A. A., 79-2929

Kukla, G. J., 79-1422 Kul-chitskaya, E. A., 79-662 Kulkarni, S. B., 79-2424 Kullerud, G., 79-1225, 3225 Kulm, L. D., 79-1018 Kulpecz, A. A., Jr., 79-2732 Kumar, R., 79-3248 (12), 3249 (32)Kumar, S., 79-4264 Kumazawa, M., 79-3993 Kumbasar, I., 79-4125 Kunc, F., 79-3317 Kupčo, G., 79-3812 Küpfer, T., 79-4391 Kurdymov, A. V., 79-2334 Kurdyukov, A. A., 79-2210 Kurdyukova, Z. I., 79-2210 Kurki-Suonio, K., 79-178 Kuroda, K., 79-3257, 3261, 3294 Kuroda, N., 79-4245 Kuroda, Y., 79-3782, 3783 Kuron, J. L., 79-2926 Kusachi, I., 79-1997, 2100, 2766, 2775, 2784 Kushiro, I., 79-283, 295-297, 300, 352, 373, 511-513, 522, 1309, 1342, 3588, 3610–3612, 3636, 3637, 3689 Kuss, E., 79-2279 Kusumgar, S., 79-3165 Kuwano, Y., 79-734, 930 Kuzmin, M. I., 79-868 Kuz'min, V. I., 79-1054 Kuznetsov, Yu. A., 79-3021 Kuznetzova (Kuznetsova), G. A., 79-3349 (77) Kužvart, M., 79-1062 Kvaček, M., 79-2890 Kvalheim, A., 79-3232 Kvenvolden, K. A., 79-2545, 3146 Kwiecińska, B., 79-3298, 3872, 4067 Kwong, K. F. N. K., 79-2014 (6.5)Kyle, P. R., 79-848 Laajoki, K., 79-483 Labib, M., 79-3069 Labeyrie, J., 79-3155 Labrecque, J. J., 79-1993 LaBrecque, J. L., 79-3084 Laduron, D., 79-652 Laffitte, P., 79-3441, 3527 Lafon, E., 79-1121 Laforêt, C., 79-961 Lagaly, G., 79-2014 (2.4), 3267 Lager, G. A., 79-1865 Lageson, D. R., 79-4274 Lahermo, P., 79-428 La Iglesia A., 79-3262, 3263 Laj, C., 79-3155 Lajoie, G., 79-3854 Lajoinie, J.-P., 79-2198 Lake, R. D., 79-1791 Lakey, B. R., 79-3349 (76) Lakshmipati, Raju, A., 79-4367 Lal, D., 79-567 Lal, R. K., 79-927, 3249 (18), Lal, S. S., 79-3535 Lallemant, A., 79-3122 Lambert, I. B., 79-416

Lambert, R. St. J., 79-1916

Lameyre, J., 79-830, 3825, 4183 Lamoen, H. van, 79-729 Lamouroux, C., 79-1829 Lambret, B., 79-1461 Lancelot, J., 79-1667 Land, L. S., 79-3015, 4280 Landa, E. R., 79-2611 Landgraf, K. F., 79-3256 Landing, E., 79-3013 Lane, A., 79-2011 Laney, R. L., 79-70 (9) Lang, A., 79-71 (20) Lang, A. R., 79-1621, 1859 Lange, D. E., 79-2700, 3985 Lange, H., 79-1070 (II.6) Lange, M., 79-549 Langer, K., 79-1590 Langford, F. F., 79-1060 (C.2, D.5, E.6) Langmuir, C. H., 79-1278 Langmuir, D., 79-1060 (A.1), 1295 Langmyhr, F. J., 79-484 Langseth, M. G., 79-546 Langworthy, A. P., 79-846 Lanoix, M., 79-645 Lanphere, M. A., 79-1, 763, 3177 Lantzy, R. J., 79-3545 Lanza, F., 79-2282 Lanzafame, G., 79-794 Lapides, I. L., 79-3349 (74) Lapierre, H., 79-1773 Lapointe, P. L., 79-4160 Lappin, M. A., 79-906 Laputina, I. P., 79-746, 1070 (IV.9)Large, D. E., 79-2155 Larin, V. N., 79-4127 Larsen, A. O., 79-1588 Larsen, B. T., 79-787, 787 (6, 10, Larsen, G., 79-3239 Larsen, S. G., 79-782 Larson, R. L., 79-3084 Larson, S. A., 79-4331 Laruelle, P., 79-190 Lasaga, A. C., 79-1499, 3627, Laskowski, D. E., 79-3192 Laskowski, T. E., 79-3192 Lasnier, B., 79-3088 Lasserre, M., 79-1008 László, K., 79-2007 (21) Latham, G. V., 79-545 Latouche, C., 79-2014 (3.4) Lattanzi, P., 79-2877 Lattanzi, P. F., 79-3515 Laud, K. R., 79-324 Lauder, W. R., 79-2941 Laufeld, S., 79-4250 Laufer, E. E., 79-2821 Laughner, J. W., 79-4348 Laul, J. C., 79-2699, 3950 Laumulin, T. M., 79-1070 (II.4)Laurent, J.-L., 79-3438 Laurent, R., 79-1777 Laverdiere, M. R., 79-3279 Lavikainen, S., 79-483 Laville-Timsit, L., 79-3801 Lavretn'ev, Yu. G., 79-683 Lavrukhina, A. K., 79-3997 Law, R. D., 79-3590 Lawless, P. J., 79-3233 (II.8)

Lawrence, J. R., 79-2527, 3819 Lawrence, L. J., 79-2213 Lawson, C., 79-3579 Lawver, J. E., 79-1227 Layne, H. F., 79-3248 (8) Lazarenkov, V. G., 79-439 Lazarev, K. F., 79-1465 Leake, B. E., 79-485, 771 (14), 1056, 1056 (3.7), 1600 Leake, M., 79-586 Lear, P. A., 79-2901 (15) Leavens, P. B., 79-1641, 4113 Leavy, B. D., 79-3233 (V.2) Lebedev, V. S., 79-2593 Lebedeva, E. G., 79-250 Le Bel, L., 79-2809 Lebertre, T., 79-586, 587 Lechemiant, A. M., 79-2782 Lechi, G. M., 79-69 (8) Leckebusch, R., 79-660, 1317, 2868 Leckie, J. O., 79-237, 2250 Leclaire, A., 79-200, 217 Leclaire, L., 79-3457 Lecocq, S., 79-3349 (8) Lécolle, M., 79-1174 Lecomte, P., 79-498 Lécorché, J.-P., 79-771 (25) Le Dred, R., 79-95, 96, 2043 Lee, C., 79-2531 Lee, C. W., 79-4029 Lee, G. B., 79-82 Lee, J. H., 79-2168 Lee, M. P., 79-4253 Lee, R.-F., 79-4199

Leeman, W. P., 79-289, 1281, 1282, 1396, 2500 Lefort, J. P., 79-4368 Le Fur, Y., 79-2179 Legendre, J. J., 79-1126 Leggett, G. E., 79-272 Legler, C., 79-741 Lehmann, B., 79-2834 Lehmann, E., 79-1828 Lehmann, G., 79-1864, 3379 Lehmann, M. S., 79-3349 (18) Leighton, D. G., 79-1484 Leinen, M., 79-3847 Leinz, R. W., 79-1053 Leitch, E. C., 79-1821 Leithner, H., 79-3764 Le Lann, F., 79-3189 Leland, H. V., 79-240 Le Maitre, R. W., 79-440 Le Marouille, J. Y., 79-206 LeMasurier, W. E., 79-861 Lemieux, J., 79-1430 Le Métour, J., 79-3031 Lenck, P.-P., 79-3475 Le Neindre, B., 79-248 Lenoble, J. P., 79-3437

Lentz, H., 79-1269 Leonard, A. J., 79-2014 (7.7) Leonard, B. F., 79-2887 Leonardos, O. H., Jr., 79-2539 Leone, G., 79-3808 Leoni, L., 79-708, 4026, 4058 Leonova, L. L., 79-1406

Lensch, G., 79-1401

Le Page, E., 79-134 Le Page, Y., 79-3349 (14) Lerau, J., 79-1301 Lerman, A., 79-71 (13)

Lerman, J. C., 79-71 (20)

le Roex, A. P., 79-457 le Roux, J., 79-2034 Le Roy, A., 79-1637 Lesquer, A., 79-4145 Lethiers, F., 79-736 Leube, A., 79-2205 Leufer, U., 79-764 Levanyuk, A. P., 79-3349 (12)

Levashev, G. B., 79-1070 (II.2), 2935

Levchenkov, O. A., 79-1935 Levell, B. K., 79-776 Leventhal, J. S., 79-2464 Leversee, G. J., 79-2249 Levesque, M., 79-3316 Levi, B., 79-936 Levi, S., 79-2977

Levien, L., 79-4345 Levi-Minzi, R., 79-3305 Levina, I. M., 79-2357 Levinson, A. A., 79-894, 1480, 1481

Levitskii, V. I., 79-683 Levy, Y., 79-3555, 3556 Lewis, B. T. R., 79-71 (17) Lewis, C. F., 79-3091

Lewis, D. W., 79-1606 Lewis, J. D., 79-1013, 1014 Lewis, J. F., 79-3836 Lewry, J. F., 79-803 Leymarie, P., 79-1399, 1706

Leyreloup, A., 79-3231 (14) Leythaeuser, D., 79-3862 l'Homel, N., 79-1995

Li, C., 79-4086 Li, D., 79-2768 Li, J., 79-1800, 2196, 2406,

3043 Li, R., 79-2522, 3142 Li, Y., 79-2212

Li, Y.-H., 79-2533 Li, Z., 79-3363 Libby, W. G., 79-1717

Libowitz, G. G., 79-2345 Lichtblau, A. P., 79-464 Liddicoat, R. T., Jr., 79-2441

Liebau, F., 79-165, 1102, 1109, 3349 (27)

Lieber, W., 79-2426, 3240 Liebermann, R. C., 79-319 Liebertz, J., 79-1354

Liebich, B. W., 79-216 Lieuvin, M., 79-3878 Ligenza, S., 79-3349 (70) Light, M. P. R., 79-2901 (5)

Lill, G. O., 79-1987 Lilly, D. K., 79-3236 (6) Lin, C.-Y., 79-2278

Lin, D., 79-2522 Lin, R. P., 79-593, 594 Lincks, G. F., 79-3108

Lindberg, R., 79-3148

Lindh, A., 79-1343 Lindsay, W. L., 79-2083 Lindstrom, D. J., 79-1282, 1283, 1519, 1529

Lindström, M., 79-4217 Lindstrom, M. M., 79-1519, 1529, 3911

Lindzen, R. S., 79-3236 (9) Lingenfelter, R. E., 79-3961 Linick, T. W., 79-2571 Liniger, J. L., 79-978 Linkoaho, M. V. H., 79-2090 Liou, J. G., 79-343, 870, 931, 2983, 3701, 4053, 4318 Lipman, P. W., 79-3231 (13)

Lipovetskii, A. G., 79-4111 Lipple, S. L., 79-1717 Lippmann, F., 79-1251 Lipschutz, M. E., 79-637, 2734,

3989 Lisitsyn, A. E., 79-3781

Lisoivan, V. I., 79-3349 (61) Lister, B., 79-1370, 3190 Lister, C. J., 79-1702

Litherland, A. E., 79-3 Litov, E., 79-1337 Little, I. P., 79-887 Liu, C.-L., 79-506

Liu, J., 79-2866, 2880 Liu, L.-G., 79-375, 649, 1332,

1346, 2336, 2413, 3698, 4357

Liu, N. W. K., 79-2984, 3820 Liu, Y., 79-2406, 2866 Livingston, H. D., 79-3846

Livshits, I. L., 79-3041 Lloyd, E. F., 79-1762 Lo, H. B., 79-43

Lo, H.-J., 79-3755, 3823, 4054, 4317

Lobach-Zhuchenko, S. B., 79-1449

Lo Bascio, A., 79-69 (3) Lobkov, V. A., 79-1475 Locardi, E., 79-858

Lock, B. E., 79-1799 Loeppert, R. H., Jr., 79-3260

Loeschke, J., 79-4209 Löffler, H. K., 79-835

Lofgren, G. E., 79-367, 1526 Logan, R. G., 79-231 Loginova, L. G., 79-1427 Lo Giudice, E., 79-69 (8) Logothetis, E. M., 79-324

Lohmann, K. C., 79-897 Loiseaux, J. M., 79-3878

Lokhova, G. G., 79-385 Løkkegaard, L., 79-4098

Lombaard, A. F., 79-2158 (17) Lombardi, G., 79-858, 1463 London, D., 79-70 (3)

Long, J. V. P., 79-3995 Long, P. E., 79-1285, 2972 Longhi, J., 79-552, 553, 1499,

2311 Longland, P. J. N., 79-3806

Longo, J. M., 79-3349 (34) Longo, V., 79-323

Longstaffe, F. J., 79-3231 (11) Lonsdale, P. F., 79-3134 Lønvik, K., 79-2349

López-Gonzáles, J. de D., 79-2050

Lorenz, V., 79-3233 (V.3) Loreto, L., 79-3343

Lorimer, G. W., 79-1241 Loring, D. H., 79-2617 Loschi Ghittoni, A. G., 79-4314 Løset, F., 79-907

Lou, L. K. V., 79-1327 Louail, J., 79-2014 (3.6), 4061 Loudon, T. V., 79-3241

Loughnan, F. C., 79-2014 (7.2), 2058 Lougnon, J., 79-3509

Love, J. D., 79-4228 Love, L. G., 79-2846 Lovering, J. F., 79-635, 1017, Lovering, T. G., 79-3503 Lovering, T. S., 79-3503 Low, G. H., 79-1668 Low, P. F., 79-2027, 3268 Lowdon, J. A., 79-29

Lowe, D. R., 79-1448, 1757 Lowrie, W., 79-3140 Lowry, P. H., 79-70 (4) Lowry, R. K., 79-3619 Lu, J., 79-4320

Lovell, J. P. B., 79-2992

Lucchetti, G., 79-672 Lucchitta, B. K., 79-3976 Luce, R. W., 79-2397 Luchitskiy, I. V., 79-2934 Luckscheiter, B., 79-3227

Ludden, J. N., 79-3826, 4224 Ludington, S., 79-1341, 3744 Ludlum, N., 79-3106

Ludman, A., 79-805 (10) Ludwiczek, H., 79-188 Ludwig, W. J., 79-1927

Luecke, W., 79-3209 Lugmair, G., 79-2495, 3980 Lui, D., 79-2866

Lukert, M. T., 79-4325 Lum, R. K. L., 79-1519, 1529 Lumsden, G. I., 79-3129 Lund, W. R., 79-70 (10)

Lundin, A. G., 79-3349 (51) Lunkad, S. K., 79-1466

Luntz, A. Y., 79-1156 Luo, Z., 79-4399

Lupton, J. E., 79-2570 Lusk, J., 79-1318, 3668 Lussmann, L., 79-4379

Luyendyk, P. P., 79-4078 Ly, C. K., 79-3006 Lyle, M., 79-430

Lyon, S. R., 79-1312 Lyons, J. B., 79-805 (12) Lyons, P. C., 79-805, (3, 7)

Lyons, W. B., 79-3554

Lysén, L., 79-477

Ma, M.-S., 79-289, 639, 1530, 2700 Ma, X., 79-2212

Maaløe, S., 79-268, 816 Mabarak, C. D., 79-3541 McAdam, A. D., 79-1229 McAllister, J. F., 79-4110

McArdle, P., 79-3232 (7) McBirney, A. R., 79-71 (19) McBride, E. F., 79-2975

McBride, M. B., 79-92, 2561, 3253

McCall, P. L., 79-2505 McCallister, R. H., 79-3233

(III.3), 3912 McCallum, I. S., 79-1287, 3873

McCallum, M. E., 79-855-856, 3233 (III.1), 3541, 4211 McCann, W. A., 79-379

McCarthy, T. S., 79-2158 (23) McCauley, J. W., 79-179 McClay, K. R., 79-2214, 3592 McClintock, W. O., 79-1227

McColl, D. H., 79-3103 McConchie, D. M., 79-1606

McConnell, D., 79-210

McConnell, J. D. C., 79-2118 McCord, T. B., 79-533, 583, McCormack, A. G., 79-1934 McCormick, J. W., 79-3601 McCulloch, M. T., 79-20, 2704 McCurry, P., 79-2899 McDaniel, R. D., 79-1742 Macdonald, K. C., 79-993 Macdonald, R., 79-2918 McDonnell, J. A. M., 79-3965 McDougall, I., 79-1940, 1960 Macdougall, J. D., 79-643, 1431, 2474, 2495, 2708, 3992 McDowell, F. W., 79-3185 McEntee, J. J., 79-380-382 McEwen, G., 79-2901 McEwen, T. J., 79-2480 McEwing, C. E., 79-1533 MacFadden, B. J., 79-1968 MacFarlane, R. B., 79-2543 McGarr, A., 79-71 (18) McGee, P. E., 79-1516, 2681, 2743 McGirr, R. R., 79-1260 McGoldrick, P. J., 79-16 MacGregor, I. D., 79-3233 (II.9) McGregor, J. A., 79-2202 McGregor, V. R., 79-3231 (6) Machado, F., 79-4411 Machajdik, D., 79-159 Machin, M. P., 79-2753 Macias, F., 79-3281 Mack, E., 79-2007 (2) McKay, C., 79-492 McKay, D. S., 79-1544, 2672, 2687, 3914, 3919, 3924, 3930 McKay, G., 79-2703 McKay, G. A., 79-1538 McKeever, S. W. S., 79-2677 McKenzie, B. J., 79-1901 McKenzie, D., 79-987, 3076 Mackenzie, F. T., 79-3545 MacKenzie, K. J. D., 79-2326, 3665-3667 Mackenzie, R. C., 79-2014 Mackenzie, R. J., 79-3498 MacKenzie, W. S., 79-2404, 2423, 3751, 3752, 4353 McKerrow, W. S., 79-1916, 3236 (18)Mackin, J. E., 79-3844 MacKnight, F. J., 79-1998 McLachlan, D., Jr., 79-3565 McLaren, A. C., 79-161 McLaren, G. P., 79-3491 McLaughlin, J. R., 79-3271 McLaughlin, R. J., 79-4246 McLean, A. C., 79-789, (1-3, 8), 1056 (4.4) McLean, N., 79-2901 (6) McLelland, J., 79-1853 McLennan, S. M., 79-3852, 3853, 3868 MacLeod, W. N., 79-836 McMahon, B. M., 79-3233 (III.4)McMillan, A. A., 79-2219 McMillan, R. H., 79-1060 (C.1) McNeill, N. H., 79-3007 MacNeill, S., 79-2054 McNutt, M., 79-1926 Macqueen, R. W., 79-1223 MacRae, N. D., 79-2980

McRitchie, W. D., 79-3231 (10) McSween, H. Y., Jr., 79-3988 Madrid, L., 79-2348 Madsen, J. K., 79-2917 Maeka, K., 79-2805 Maes, A., 79-2014 (2.11), 2045 Maes, J., 79-388, 2433 Magaritz, M., 79-284, 460, 461, 1284, 1286, 1294 Magenham, J. C., 79-3482 Maggetti, M., 79-2923, 4391 Magni, G., 79-614 Magnusson, K.-A., 79-4331 Mahanti, S. C., 79-3522 Mahapatra, P. P., 79-2364 Maher, M. J., 79-2158 (25) Mahmood, A., 79-3018 Maijer, C., 79-657 Mainwaring, P. R., 79-1200, 4116 Mair, S. L., 79-136 Majid, M., 79-56 Majumdar, S. K., 79-3536 Makagon, V. M., 79-696, 2823, 3349 (78) Makarova, N. N., 79-720 Makarova, T. A., 79-358 Mäkelä, M., 79-2171 Makhmudov, A. I., 79-746 Makhmudov, S. A., 79-2104 Makita, Y., 79-3414 Makovicky, E., 79-4096 Makovicky, M., 79-3065, 4096 Makrygin, A. I., 79-696 Maksimov, B. A., 79-2102 Maksimović, Z., 79-1648, 2007 (4), 2190Malakhov, A. A., 79-2462 Malesani, P., 79-4260 Malin, M. C., 79-617 Malinko, S. V., 79-735, 3781 Malinovskii, Yu. A., 79-2103 Malkova, R. N., 79-1070 (II. 4) Mallett, R. C., 79-1994, 3210 Malm, O., 79-9 Malpas, J., 79-3231 (15) Maluski, H., 79-1950 Malyshev, A. I., 79-1570 Malysheva, T. V., 79-1570 Mamchur, G. P., 79-1374, 3790, Mamy, J., 79-86, 2014 (1.4, 2.7) Man, E. H., 79-1416 Mandákova, K., 79-1070 (III.2) Mandalia, B. T., 79-2166 Mandarino, J. A., 79-1989, 4014, 4123, 4328 Mandeville, J.-C., 79-571, 2673 Manetti, P., 79-4242 Manfra, L., 79-475 Manker, J. P., 79-3016 Mankov, Sl., 79-1070 (I.4) Mann, A. G., 79-2158 (8) Manning, D. A. C., 79-3581 Manning, P. G., 79-2098, 2821, 3356, 3368 Manning, P. I., 79-2898 Manseau, G., 79-3452 Mansker, W. L., 79-4035 Manson, D. V., 79-2432 Mansurov, M. M., 79-4065 Mantovani, M. S. M., 79-1969

Manuel, O. K., 79-2737

Manuppella, G., 79-2079, 2512, Mason, S. A., 79-205 2997 Mao, A. L., 79-2683 Mao, H. K., 79-150, 151, 279, 304, 318, 337-340, 350, 509, 4407 514-517, 519, 521, 523, 585, 702, 955, 2683, 3560, 3561, 3573, 3659, 3669, 3712, 3713, 4344, 4358 Maquil, R., 79-3724 Marble, L., 79-982 March, S. P., 79-3183 Marchal, M., 79-1705 Marchesseau, J., 79-2225 Marchig, V., 79-2078 Marcopoulos, T., 79-2401 Marcotty, L.-A., 79-761 Marengwa, B. S. I., 79-2192, 2605 Marfunin, A. S., 79-3242 Margheim, J. F., 79-3268 Margolis, S. V., 79-3850 Margulis, L., 79-1906 Marie, R., 79-2208 Mariko, T., 79-3462 (5) Marin, L., 79-2616 Marin, Yu. B., 79-4127 Marinova, R., 79-733 Mariolacos, K., 79-3671 Mariotti, G., 79-69 (9) Märk, T. D., 79-3149 Marková, M., 79-4056 Maro, A., 79-3825 Marques, J. F., 79-3469 Marr, J. M., 79-2388 Marriner, G. F., 79-1770 Marsh, B. D., 79-872, 4244 Marsh, S. C. K., 79-2158 (9) Marsh, S. P., 79-1856, 3504, 4384 Marshall, D. J., 79-59 Marshall, R. E., 79-3460 Martel, Y. A., 79-3279 Martelli, G., 79-2264 Marten, B. E., 79-2912 Martin, A., 79-2619 Martin, B., 79-2296, 2297 Martin, C. J., 79-215 Martin, H., 79-2158 (26) Martin, R. F., 79-3650, 3784 Martin, R. J., III, 79-598 2556 Martin, W., 79-620 Martini, J., 79-768 Martini, M., 79-391, 3884, 3885 Martins, J. Ávila, 79-4185 Marumo, F., 79-138, 1132, 2112 Marvin, J. A., 79-3915 Marvin, U. B., 79-1556, 2688 Marzetti, G., 79-2643 Masaitis, V. L., 79-1405 Masalovich, A. M., 79-251 Masgutov, R. V., 79-1070 (II.4) Marzouki, F., 79-2484 3213 Mashir, V. N., 79-2195 Masi, U., 79-475 Masi, Y., 79-2514 Maske, S., 79-2158 (24) Maslenikov, A. V., 79-147, 2105 Maslov, M. A., 79-4109 Mason, C. C., 79-507 Mason, D. L., 79-1260 Mason, D. R., 79-1759 Mason, R., 79-73 Mason, R. A., 79-2405, 3746 Megard, F., 79-1744

Massalski, A., 79-3548 Masse, R., 79-3088 Massey, N. W. D., 79-2498, Masson, P., 79-607 Mast, T. S., 79-4 Mastrangelo, F., 79-3474 Masuda, Y., 79-2488 Masutomi, K., 79-1656 Matheis, E., 79-1830 Mathew, M., 79-209, 2142 Mathews, W. H., 79-3307 Mathieu, J-C., 79-2280 Matisoff, G., 79-2243 Matizen, E. V., 79-315 Matson, D. L., 79-579-581 Matsubara, S., 79-687, 734, 756, 930, 1656, 2776, 2838, 4027, 4038, 4063 Matsubaya, O., 79-2525 Matsubayashi, H., 79-1043 Matsuda, H., 79-2559 Matsui, Y., 79-1139 Matsumoto, T., 79-2135 Matsunaga, K., 79-2251 Matsuo, G., 79-687 Matsuo, S., 79-413, 3782, 3783 Matsutoya, S., 79-2860 Mattey, D. P., 79-1770 Matthews, A., 79-3786 Matthews, K. M., 79-2610 Matthews, R. K., 79-1472 Mattias, P., 79-4064 Mattigod, S. V., 79-2305 Mattinson, J. M., 79-5, 27, 31-34, 1029, 1496 Matula, I., 79-1070 (III.2) Matza, S. D., 79-637, 2734 Matzat, E., 79-2134, 3349 (9) Mauduit, F., 79-69 (10) Mauger, R. L., 79-3182 Maurel, C., 79-1320 Maurer, P., 79-2658 Maurizio, R., 79-4104 Maury, R. C., 79-830, 2477, 2804, 4183 Mauskopf, S. H., 79-74 Max, M. D., 79-1827, 1945 Maxwell, J. R., 79-1441, 2546, Maxwell, T. A., 79-576, 2669 May, F., 79-1230 May, H. M., 79-1996 May, R. V., 79-3187 Mayeda, T. K., 79-622 Mayer, H., 79-1147 Mayers, I. R., 79-1418 Mayfield, D. G., 79-866 Mazai, F., 79-3384 Mazzi, F., 79-169, 2122 Mazzucotelli, A., 79-1992, 2483, Mead, C. W., 79-2887 Meads, R. E., 79-1419 Meagher, E. P., 79-2101, 3390 Meakins, R. L., 79-1369 Means, J. L., 79-2255, 2608 Medenbach, O., 79-2769, 2891 Medernach, J. W., 79-2125 Medici, J., 79-3106 Medizza, F., 79-3140 Meents, W. F., 79-506

Mehrotra, B. N., 79-2136, 2356 Mehta, B. J., 79-2166 Mehta, P. K., 79-3249 (25), 4052 Meier, H., 79-410 Meille, V. S., 79-1099 Meinke, L., 79-4362 Meinschein, W. G., 79-2549 Meissner, R., 79-549 Meixner, H., 79-964, 1899 Mejsner, J., 79-103, 1090 Mellichamp, J. W., 79-2013 (1.3) Mellini, M., 79-2131, 3349 (43), 4026, 4058 Melnikov, O. K., 79-3349 (57) Mel'nikova, N. D., 79-1426 Menard, D., 79-3603 Menard, H. W., 79-1926 Menchetti, S., 79-197, 1140, 3362, 3421 Menconi, L. C., 79-3186 Mendelovici, E., 79-1993 Mendelssohn, M. J., 79-3349 Menegazzo-Vitturi, L., 79-2802 Meneisy, M. Y., 79-1711 Menge, P., 79-410 Menschel, G., 79-2578 Men'shikov, Yu. P., 79-662 Menzies, M. M., 79-456 Mercier, J.-C. C., 79-3233 (II.12) Mereiter, K., 79-3413 Mereu, R. F., 79-1874 Mergoil-Daniel, J., 79-2921 Merlino, S., 79-2131, 3349 (43), 4058 Merrill, R. K., 79-865 Merrill, R. T., 79-986, 4364 Merriman, R. J., 79-471 Mertzman, S. A., 79-4413 Mertzman, S. A., Jr., 79-1738 Messerschmidt, A., 79-671 Messier, R. F., 79-2 Metson, A. J., 79-2021 Metzger, A. E., 79-577, 578, 593 Metzik, M. S., 79-3349 (60) Meunier, A., 79-2014 (4.8), 2061 Meuzelaar, H. L. C., 79-3318 Meyer, C., 79-3349 (69) Meyer, C. E., 79-4010 Meyer, G., 79-3968 Meyer, H. O. A., 79-718, 854, 1691, 3233, 3233 (II.5, III.3, III.7), 3912 Meyer, P. S., 79-2969 Meyer, R., 79-1421 Meyerhoff, M., 79-1519 Meyers, A. M., 79-1244 Meyers, W. J., 79-897 Miall, A. D., 79-1661, 1785 Miao, W., 79-2406 Michael, D., 79-3937 Michard, A., 79-771 (24) Michard, A. G., 79-3466 Michard, G., 79-429, 1461, 2585.3889 Michard-Vitrac, A., 79-11 Michel, P., 79-3349 (8) Michel, R., 79-2208 Michels, J. W., 79-2 Michie, U. McL., 79-220, 1599, 3465 Middlemiss, F. A., 79-1793 Middleton, S., 79-3266 Mifsud, A., 79-2049

Migdisov, A. A., 79-1449 Mikadze, G. A., 79-2828 Mikhail, R. S., 79-3264 Mikhail, R. Sh., 79-2425 Mikhaleva, L. A., 79-2933 Mikheyenko, V. I., 79-2932 Mikkelsen, N., 79-1018 Mikloš, D., 79-3349 (4) Miklyaev, A. S., 79-4109 Milenko, S., 79-3477 Miles, E. R., 79-3772 Miles, N. M., 79-360, 3282 Millard, H. T., Jr., 79-487, 3231 (12, 13, 17, 18)Milledge, H. J., 79-3349 (46) Miller, A. A. L., 79-1044 Miller, A. D., 79-1427 Miller, C. D., 79-1768 Miller, C. F., 79-2949 Miller, C. R., 79-2948 Miller, D. S., 79-3555, 3556 Miller, J. M., 79-2965 Milliken, K. L., 79-4276 Millot, G., 79-1420, 1796 Mills, B. A., 79-938 Mills, G. L., 79-3216 Milne, J. K., 79-3679 Milnes, A. G., 79-909 Milošević, O., 79-949 Milson, J. S., 79-4397 Milton, C., 79-1646, 4081 Mimran, Y., 79-3002 Minard, J. P., 79-3497 Minatidis, D. G., 79-3777 Minato, H., 79-2014 (7.5) Minato, I., 79-1145 Mineeva, R. M., 79-3349 (48) Minell, H., 79-3449 Mingelgrin, U., 79-2051, 3251 Minkin, J. A., 79-1520 Minnitt, R. C. A., 79-2158 (4) Minster, J.-F., 79-2502, 3990 Mintkenov, G. A., 79-762 Misener, D. J., 79-336 Mishin, V. I., 79-61 Mishra, B., 79-89 Mishra, R. N., 79-3490 Misko, R. M., 79-3010 Misra, K. C., 79-1554 Miszewski, K., 79-1666 Mitchell, J. G., 79-1698, 3153 Mitchell, R. H., 79-850, 1626, 2789, 2942, 3233 (II.7) Mitchell, R. S., 79-717, 750, 1741, 4385 Mitchell, T. E., 79-1327, 1329, Mitchell-Thomé, R. C., 79-793 Mitra, A. K., 79-2347 Mitra, B., 79-3536 Mitra, N. K., 79-3754 Mitra, S., 79-1870, 3063, 3754 Mitterer, R. M., 79-2554 Mittlefehldt, D. W., 79-1533, Miúra, Y., 79-1614, 2818, 2892, 3420 Miyahisa, M., 79-2860 Miyake, M., 79-1145 Miyamoto, M., 79-1553, 3340 Miyata, S., 79-3275 Mizuno, H., 79-3778 Mizutani, H., 79-598

Mizutani, N., 79-3674

Mizutani, S., 79-77 Mladeck, M. H., 79-2779 Modreski, P. J., 79-359 Moëlo, Y., 79-961 Moench, R. H., 79-805 (8) Mogami, K., 79-3340 Moh, G. H., 79-1070 (IV.5) Mohr, P., 79-71 (8) Moine, P., 79-1637 Moitra, A. K., 79-3536 Mojab, F., 79-3249 (2) Moldowan, J. M., 79-2584 Molière, P., 79-1174 Molinar, G. F., 79-247 Möller, P., 79-2184 Molnar, P., 79-1919 Monchoux, P., 79-962 Moncure, G. K., 79-1092 Mongiorgi, R., 79-3431 Monier, J.-C., 79-200 Monin, A. S., 79-71 (21) Moniot, K., 79-640 Monster, J., 79-3851 Montoya, J. W., 79-2397 Mookherjee, A:, 79-223, 1178 Moorbath, S., 79-2528, 3837 Moore, A. C., 79-820, 1843 Moore, C., 79-70 (12), 415, 477 Moore, C. B., 79-1514 Moore, D. E., 79-4053 Moore, D. J., 79-3507 Moore, D. M., 79-1371 Moore, F., 79-732, 1816, 2832, Moore, G. E., Jr., 79-123 Moore, G. S. M., 79-4055 Moore, J. C., 79-1775 Moore, J. G., 79-4212 Moore, J. McM., 79-1151, 4148 Moore, J. R., 79-3433 Moore, P. B., 79-146, 770, 1652, 2876, 3361, 3417 Moore, R. M., 79-2595 Moore, W. S., 79-3881 Moorehouse, V. E., 79-3025 Moorhouse, S. J., 79-3025 Morandi, N., 79-2812 Moreale, A., 79-3292 Moreira, J. C., Belacó, 79-2079, 2512, 2997 Morel, F., 79-3513 Morel, J., 79-1995 Moren, A. E., 79-624, 3994 Moret, L. K., 79-2819 Morgan, B. A., 79-1165 Morgan, C. J., 79-3920, 3980 Morgan, D. J., 79-1231, 1234, 2014 (3.7), 2053 Morgan, J. J., 79-2596 Morgan, J. W., 79-2735 Mörgeli, M., 79-3922 Morgenstern, N. R., 79-4248 Morikawa, H., 79-1145 Morimoto, N., 79-667, 3349 (11), 3403Morio, M., 79-2163 Morishima, H., 79-1043 Moritz, L. E., 79-3549 Morizur, G., 79-252 Morris, B. J., 79-504 Morris, D. F. C., 79-1383 Morris, J. H., 79-882 Morris, R. V., 79-1544, 2671, 3913, 3914, 3924, 3925, 3958

Morris, W. A., 79-4369 Morrison, D. A., 79-569, 3932 Morrison, M. A., 79-444 Morrow, D. W., 79-893, 1240, 1418 Morse, J. W., 79-2365 Morse, S. A., 79-367, 1611 Morteani, G., 79-1601, 2468, 3792 Morten, L., 79-2563 Mortimer, G. E., 79-14 Mortland, M. M., 79-2014, 2041 Morton, A. C., 79-4252 Morton, R. D., 79-234, 1060 Mosca, R., 79-1714 Mose, D. G., 79-3178 Mosher, J. A., 79-580, 581 Moshkin, V. N., 79-924 Moskowitz, B., 79-2977 Mosset, A., 79-3415 Mossman, D. J., 79-827 Motomura, Y., 79-2860 Motooka, J. M., 79-3219 Mott, C. J. B., 79-1059 (4) Mottana, A., 79-2563 Mottl, M. J., 79-2308 Moura, A., Casal, 79-2081 Moussine-Pouchkine, A., 1667 Moustafa, A. B., 79-4335 Mozgova, N. N., 79-747 Mrose, M. E., 79-1655, 4384 Mubarak, A., 79-3255 Muchi, M., 79-97, 117, 691, 711, 751 Muchmore, C. B., 79-243 Mücke, A., 79-1654, 4119, 4373 Muecke, G. K., 79-28, 465 Muehlenbachs, K., 79-441, 445, 446, 467, 2315 Muenow, D. W., 79-1409, 2984, 3820 Muff, R., 79-1208, 2158 (4) Muguruma, A., 79-3762 Muhling, P. C., 79-1424, 1668 Muir, M. D., 79-491, 1944 Muir, T. L., 79-2604 Mukherjee, S. N., 79-3536 Mukhopadhyay, D., 79-3038 Mukhopadhyay, D. K., 79-223 Mukhopadhyay, P., 79-4150 Müller, F., 79-2344 Müller, G., 79-1306, 4140 Müller, H. W., 79-570, 1497, 1549 Muller, J. A., 79-2158 (25) Müller, O., 79-1489 Muller, R. A., 79-4 Muller, R. N., 79-3252 Müller, W. F., 79-141 Mulligan, R., 79-1070 (VI.1) Mumme, T. C., 79-3083 Murad, E., 79-69 (11), 2064, Muradyan, L. A., 79-2102 Murakami, K., 79-751, 2892 Murali, A. V., 79-289, 1530 Murali, V., 79-114 Muramatsu, K., 79-1139 Muratov, I. G., 79-680 Murphy, J. W., 79-3859 Murphy, S., 79-2831 Murray, J. B., 79-2955

Murray, J. W., 79-2592 Murray, L. J., 79-2014 (7.3) Murray-Rust, P., 79-3347, 3348 Murthy, R. S., 79-2074 Murthy, V. R., 79-456, 638 Mussett, A. E., 79-1934 Mustafa, Z., 79-3480 Mutch, T. A., 79-3982 Myers, J., 79-3568 Myers, R. G., 79-4390 Mykura, W., 79-1230 Mysen, B., 79-301 Mysen, B. O., 79-285, 1288, 1309, 2312, 3569, 3588, 3613, 3615–3617, 3632–3634, 3636, 3637, 3643, 3805 Nachev, I. K., 79-1794 Nadler, H., 79-596 Nadyarian, V. N., 79-1070 (IV.7) Naeser, C. W., 79-1028, 3176 Naganuma, Y., 79-4202 Nagao, K., 79-413 Nagasawa, H., 79-1568, 2526 Nagashima, K., 79-687, 1656, 2776, 2790, 2858, 2884 Nagata, H., 79-1146, 2037, 2113 Nagel, K., 79-572 Nagl, A., 79-3349 (44) Nagle, J. S., 79-2679 Nagpal, M. K., 79-1953 Nagpaul, K. K., 79-1952, 1953, 4012 Nagy, B., 79-1386 Nahon, D., 79-1420 Naidenov, M., 79-3228 Naidu, P. P., 79-3211 Naik, I. K., 79-311 Nair, R. S., 79-1404 Nairn, A. E. M., 79-71 (5) Nakada, Y., 79-3998 Nakai, I., 79-1656, 2790, 2858 Nakai, M., 79-1086 Nambi, K. S. V., 79-1870 Nakajima, T., 79-2276 Nakajima, Y., 79-2111 Nakamura, N., 79-1535 Nakamura, Y., 79-545 Nakapadungrat, S., 79-3167 Nakayama, F., 79-2859 Nakazawa, H., 79-2414 Nakazawa, K., 79-3778 Nakhla, F. M., 79-1204 Nambi, K. S. V., 79-953, 3063 Nambu, M., 79-4083 Nancollas, G. H., 79-253 Nandi, D. N., 79-3535 Nandi, M. M., 79-2165 Napoleone, G., 79-69 (9) Naqvi, S. M., 79-885, 2445 Narasaraju, T. S. B., 79-3677 Narasimhan, K. S., 79-1980 Narayan, K. L., 79-1980 Narayana, B. L., 79-885 Narbonne, G. M., 79-800 Nash, J. T., 79-3500 Nash, W. P., 79-4230 Nashar, B., 79-1760, 2940 Nassau, K., 79-661, 1362 Natale, P., 79-3474 Naterstad, J., 79-787 (8, 9) Nava, D. F., 79-1519, 1529 Navarro, E., 79-2760

Navin, T. R., 79-1063 Navrotsky, A., 79-176, 1289, 3236 (5) Nawaz, R., 79-1814 Naylor, M. A., 79-4146 Nazaré, M. H., 79-3057 Nazarenko, I. I., 79-1427 Nazarov, M., 79-3246 Nazarov, M. A., 79-3935 Nazarova, N. V., 79-2560 Ncube, A., 79-221 Ncube, A. N., 79-3532 Neale, E. R. W., 79-4236 Nedachi, M., 79-1182 Nedoma, J., 79-3338, 3339 Needham, R. S., 79-1718 Neef, G., 79-1960 Nefedov, E. I., 79-4088 Neff, T. A., 79-1397 Negi, S. S., 79-1387 Negretti, G., 79-4312, 4313 Nehru, C. E., 79-2648, 2728, 3983 Neil, J. M., 79-2722 Nekrasov, I. Ya., 79-1070 (IV.6) Nekut, A., 79-1877 Nelen, J. A., 79-395, 4113 Nelišerová, E., 79-3760 Nelson, C. A., 79-2948 Nelson, K. D., 79-2986 Nelson, W. H., 79-849 Němec, D., 79-2773, 3019 Nesbitt, H. W., 79-254, 2398 Ness, N. F., 79-3236 (11) Nesbitt, R. W., 79-14, 1407, 2293 Nesterchuk, N. I., 79-358 Neubüser, J., 79-2008 Neukum, G., 79-572 Neumann, E.-R., 79-787 (3) Newman, A. C. D., 79-1059 (2) Newman, D. J., 79-2097 Newnham, R. E., 79-4348 Newsom, G., 79-3115 Newton, G., 79-2264 Newton, R. C., 79-1333, 2285, 2300, 3642, 3708 Ng, A., -79-286 Ng, H. N., 79-3410 Ni, J., 79-1920 Nichol, D., 79-230, 396, 1845 Nicholas, A., 79-1707 Nicholls, J., 79-259 Nickel, E., 79-58 Nickless, E. F. P., 79-2219 Nicol, M. J., 79-332 Nicolas, A., 79-4332 Nicollet, C., 79-3231 (14) Nicollin, D., 79-216 Nieć, M., 79-4108 Niedermayr, G., 79-967, 3768 Niedermeier, W., 79-2013 (2.3) Nielsen, B. L., 79-3232 (5) Nielsen, K., 79-3349 (36), 3375 Nielsen, O. B., 79-1095 Nielsen, R. L., 79-2692, 3911 Nielsen, T. F. D., 79-817, 4174 Nielson, D. L., 79-805 (12) Niemeyer, S., 79-3923 Nieto, J. L., 79-238, 2258 Nikanorov, A. S., 79-2930 Nikolaeva, O. V., 79-3974 Nikolaeva, V. P., 79-256 Nikolayev, D. S., 79-1465

Nikolskaya, L. V., 79-1622 Nikulin, N. N., 79-3518 Nilsen, T. H., 79-1056 (5.2) Nilsson, Ö., 79-3148 Ninkovich, D., 79-1755 Nisbet, E., 79-1400 Nisca, D., 79-3188 Nishankhodzhayev, R. N., 79-1427 Nishida, N., 79-1568 Nishida, T., 79-2820 Nishiizumi, K., 79-1573 Nishimura, M., 79-2251 Nishiyama, T., 79-2014 (1.8), Odin, G.-S., 79-2396 2893 Odom, J. W., 79-2027 Nissenbaum, A., 79-1464, 2542 O'Donnell, T. H., 79-4233 Nissenbaum, A., 79-1464, 2542 Nitsche, R., 79-189 Niwa, Y., 79-2790, 2858 Nixon, G. T., 79-2945 Nixon, P. H., 79-669, 838, 2928, 3233 (II.4, III.6, V.5), 4008 Nixon, R. A., 79-4051 Noble, D. C., 79-1744 Nobugai, K., 79-667 Nogami, K., 79-4000 Nogteva, V. V., 79-941 Nohara, M., 79-2154, 3796 Nohda, S., 79-2488 Nolan, J., 79-3614, 3619 Nolet, D. A., 79-2096 Noll, W., 79-3124 Nomura, K., 79-3340 Nonaka, T., 79-117, 751 Nord, G. L., Jr., 79-1546, 1613 Nordmann, J. C., 79-530 Norman, M., 79-2684 Noronha, F., 79-2181 Norrestam, R., 79-3349 (36) Norry, M. J., 79-2503, 3802 Norton, D., 79-2569 Norton, I., 79-4362 Norvick, M. S., 79-4153, 4398 Noshkin, V. E., 79-3556 Notarpietro, A., 79-4307 Notebaart, C. W., 79-690, 3100 Notsu, K., 79-413, 1568 Notsu Y., 79-2276 Nottenburg, R., 79-2169, 4359 Nottenburg, R. N., 79-4354 Nottenbury, R., 79-3075 Novák, F., 79-2841 Novák, I., 79-159, 2035 Nováková, L., 79-159 Nover, G., 79-3685 Novitsky-Evans, J. M., 79-1932 Novitskii, Yu. V., 79-1070 (IV.11) Novgorodova, M. I., 79-743 Novoselov, Yu. M., 79-1141 Novotny, J., 79-2841 Nowacki, W., 79-195, 3349 (44) Nozik, Yu. Z., 79-2102 Nriagu, J. O., 79-2245 Nuckols, E. B., 79-4325 Nuffield, E. W., 79-3407 Nukui, A., 79-2414 Numano, T., 79-1997 Nummedal, D., 79-608 Nur, A., 79-1303 Nurmi, R. D., 79-4271 Nuruyu, K., 79-97 Nutt, C. J., 79-849 Nutt, M. J. C., 79-3232 (6) Nyland, E., 79-1878

471 Nyambok, I. O., 79-421 Nyquist, L. E., 79-1492, 2703 Nystuen, J. P., 79-879 Oakley, P. J., 79-2764 Oas, T. G., 79-1244 Oberbeck, V. R., 79-3946 Oberhänsli, R., 79-1400, 4305 Oberhauser, R., 79-2621 Oberlaender, P., 79-60 Obradović, J., 79-1620 O'Bryan, H. M., Jr., 79-951 O'Connor, D. A., 79-215 O'Donoghue, M. J., 79-1361, 2437 O'Driscoll, C. F., 79-4207 Odu, C. T. I., 79-109 Oehler, D. Z., 79-416 Offler, R., 79-936 Oftedahl, C., 79-787 (13) Ogawa, H., 79-2790 Ogbuji, L. U., 79-1329, 1330 Oggiano, G., 79-3516 Ogorodnikov, B. I., 79-2259 O'Hara, M. J., 79-2287, 2288, 2291, 2292, 2298, 2329-31, 2333, 2369-71, 2376, 2407, 2409, 2421, 3693, 3725, 4296, 4297 O'Hara, P. F., 79-70 (4) Ohashi, Y., 79-140, 160, 355 Ohkubo, T., 79-2057 Ohse, R. W., 79-2270

Ohta, K., 79-3733 Oinuma, K., 79-2014, (1.8) Oka, Y., 79-2794 Okada, A., 79-631 Okajima, S., 79-939 Okamoto, K., 79-2488 Okamura, F. P., 79-664, 3388 Okamura, K., 79-270 Okay, A., 79-1598 Okay, A. I., 79-2793 O'Keefe, J. D., 79-3936 O'Keefe, M., 79-177 O'Keefe, N., 79-1103 Okrusch, M., 79-1838 Olatunji, J. A., 79-1218 Oldershaw, A., 79-1636 Oldershaw, A. E., 79-3009 O'Leary, R. J., 79-1931 Oleksyshyn, J., 79-805 (6) Olesch, M., 79-2392, 3381 Oleson, N. Ø., 79-1823 Olimpio, J. C., 79-1589, 2755 Oliveira, A. da S., 79-1687 Oliver, G. J. H., 79-4075 Olivier, D., 79-1077 Olliver, J. G., 79-118, 225-227, 230, 2227, 2231, 2232, 2234-2236 Olojo, E. O., 79-1020 Olsen, A., 79-4347

Olsen, E., 79-1571, 3091 Olsen, K. I., 79-9 Olson, E. R., 79-1809 Olszewski, E., 79-636 Onaka, T., 79-3998 O'Neil, J. R., 79-486, 2456, 3233

(II.10), 4057 O'Neill, H., 79-3691 O'Nions, R. K., 79-2476, 2725, 2727, 3236 (2) Onishi, K., 79-98, 2060 Ono, A., 79-4286 Ono, T., 79-2075 Onorato, P. I. K., 79-1501, 1551, 2695, 2696, 2744 Ontoev, D. O., 79-1070 (II.3) Onuma, K., 79-2327, 3733, 4172 Onuma, N., 79-1568, 3993 Onuoha, K. M., 79-4238 Onyeagocha, A. C., 79-1850 Opuwaribo, E., 79-109 Orcutt, J. A., 79-2987 Orekhov, V. S., 79-1427 Organova, N. I., 79-3349 (49) Orgeval, J.-J., 79-3451 Origoni Giobbi, E., 79-4311 Orkild, P. P., 79-4229 Orlandi, P., 79-4026, 4058 Orliac, M., 79-2871 Orlický, O., 79-3157 Ormaasen, D. E., 79-9 Orpen, J. L., 79-3159 O'Rourke, P. J., 79-1215 Osberg, P. H., 79-771 (19) Osborn, E. F., 79-69 (12), 3687 Oborne, M., 79-584 Osika, D. G., 79-2593 Osipova, G. A., 79-1070 (V.2) Osmólski, T., 79-2515 Ospovat, A. M., 79-1905 Ostrovskaya, N. F., 79-2334 Ostrovskiy, V. Ye[E]., 79-2465 Ostwald, J., 79-710, 1631, 2844 Oswald, D. L., 79-765 Oswald, S. G., 79-4011 Oterdoom, W. H., 79-4291 Ototake, H., 79-401 Otsuka, R., 79-2893 Ott, U., 79-2714 Ott, W. D., 79-2374 Ottemann, J., 79-738, 1581, 2739, 4021 Ottewill, R. W., 79-3266 Otto, K., 79-324 Ottonello, G., 79-2483 Ouzounian, G., 79-2585, 3889 Ovchinnikov, L. N., 79-251 Ovichinnikov, L. N., 79-1070 (IV.7)Ovsyannikov, I. I., 79-3483 Owen, R. M., 79-3844 Owens, D. R., 79-3368, 4114 Oxtoby, S., 79-3628-3631 Ozawa, T., 79-2894

Ozima, M., 79-3143, 3398, 3998 Paar, W., 79-4117 Pabian, R. K., 79-402 Pabst, A., 79-1646, 3429 Pačes, T., 79-2307 Pachadzhanov, D. N., 79-1426 Page, B. G. N., 79-4151 Page, N. J., 79-1733 Page, R. W., 79-1015, 1961 Paglionico, A., 79-3034 Pagliuca, G., 79-3683 Pahl, M., 79-3149 Pal, S., 79-2615 Pälchen, W., 79-1070 (III.10) Pal'chik, N. A., 79-2137 Paley, I. P., 79-3040 Pal'gueva, G. V., 79-755

Palkina, K. K., 79-3349 (35) Pallix, G., 79-3099 Palme, C., 79-1531 Palme, H., 79-527 Palmer, B. D., 79-3987 Palmer, H. C., 79-3174 Palmer, S., 79-1646 Palmer, T. D., 79-4115 Palmieri, E. L., 79-606 Palmieri, F., 79-1086 Panagos, A. G., 79-1756, 3001, 4261 Panayiotou, A., 79-1202 Pande, P. C., 79-3871 Panichi, C., 79-2569 Panina, L. I., 79-2916 Pankhurst, R. J., 79-452, 2492, Pankiwskyj, K. A., 79-805 (10) Pannhorst, W., 79-3349 (29), 3367 Pant, R. K., 79-3165 Pantazis, T. M., 79-69 (13) Pantin, H. M., 79-880 Pantó, G., 79-3814 Panto, G. Y., 79-1233 Paoli, A., 79-194 Papanastassiou, D. A., 79-1505, 2452, 2704, 3962 Pape, H., 79-1169 Papazeti, H., 79-2007 (23) Papezik, V. S., 79-2945 Papike, J. J., 79-934, 1495, 1563, 2653, 2654, 2661, 2690, 2699, 2788, 3926, 3927 Papp, H. A., 79-2682 Paquet, H., 79-1420, 1796 Paquet, J., 79-3603 Pardini, G. C., 79-3808 Pareek, H. S., 79-1403 Parekh, P. P., 79-3227 Parfitt, R. L., 79-274 Paris, T. A., 79-873 Park, C. F., Jr., 79-71 (14) Park, J. K., 79-1000, 4370 Park, R. G., 79-1676 Park W. C., 79-805 (13) Parker, A., 79-3306 Parker, F. J., 79-2839 Parker, P. L., 79-2449 Parker, R. E., 79-578 Parker, S. R., 79-644 Parkin, C. W., 79-564 Parkin, K. M., 79-584, 1595 Parmentier, E. M., 79-1176 Parodi, G., 79-4064 Parotto, M., 79-609-612, 858, 3948 Parrish, I. S., 79-1222, 3105 Parron, C., 79-1420 Parshad, R., 79-1952, 4012 Parslow, G. R., 79-1481 Parsons, B., 79-3076, 4362 Parsons, I., 79-3748, 4047 Parsons, M. L., 79-1514 Parthasarathy, A., 79-841 Pask, J. A., 79-1334 Passaglia, E., 79-707, 708 Pasteris, J. D., 79-3233 (III.6), 4073 Patchett, P. J., 79-25, 1005, 3784 Patchineelam, S. R., 79-1250 Paterson, E., 79-2014 (6.2) Paterson, I. A., 79-801

Paterson, M. S., 79-1064, 3749 Patience, R. L., 79-2546, 2556 Paukov, I. E., 79-250 Paukov, I., Ye|E|., 79-941 Paul, D. K., 79-3815 Pauling, L., 79-3402 Pauly, H., 79-4371 Paus, P. E., 79-2246 Pavanaguru, R., 79-3489 Pavlov, V. A., 79-1070 (III.11) Pawlikowski, M., 79-3196 Payne, J. G., 79-3231 (16) Pe, G. G., 79-1756, 3001, 4261 Peachey, D., 79-1050 Peacor, D. R., 79-1835, 2795, 2883, 2888, 4115, 4120, 4124 Pearce, G. W., 79-558, 645 Pearce, J. A., 79-3802 Pearce, T. G., 79-2303 Pearson, F. J., Jr., 79-2588, 2590 Pearson, M. J., 79-2014 (3.8), Pearton, D. C. G., 79-2002 Pearton, T. N., 79-2158 (4, 5) Peccerillo, A., 79-4242 Peck, D. L., 79-4225, 4226 Peckett, A., 79-2658 Peckins, E., 79-365 Pecoraro, T. A., 79-3409 Pedersen, A. K., 79-812, 814, 815, 1625, 4069 Pederson, S., 79-786 Pedeux, J. P., 79-3482 Pedro, G., 79-110 Pedroso de Lima, L. M. C., 79-3469 Peeters, G., 79-2040 Peigneur, P., 79-2014 (2.11) Peirce, J. W., 79-4412 Peirce, M. G., 79-3492 Pekkala, Y., 79-2218 Pelgrims, J., 79-2042 Pellas, P., 79-2676 Pellizzer, R., 79-2257 Pelly, I., 79-1237 Pemberton, H. E., 79-3112 Penco, A. M., 79-672 Peng, T.-H., 79-2507 Peng, Z., 79-1645 Pen'kov, V. F., 79-1384 Penney, S. R., 79-857 Pense, J., 79-397 Penta, A., 79-1463 Pentinghaus, H., 79-1117 Penzkofer, B., 79-3349 (10) Pepin, R. O., 79-3978 Pérati, B., 79-2014 (6.3) Perchuk, L. L., 79-1345 Percival, J., 79-905 Perdue, E. M., 79-2551 Pereira, L. C., Gama, 79-4301 Pérez Rodriguez, J. L., 79-2014 (2.13)Perić, J., 79-2007 (25) Perkins, R. W., 79-3950 Permingeat, F., 79-2871 Perry, E. C., 79-490 Persson, L., 79-4177 Pertold, Z., 79-1200 Pertusati, P., 79-3516 Peselnick, L., 79-1871 Pessagno, E. A., Jr., 79-4246 Peterman, Z. E., 79-451, 3179, 3231 (4), 3834

Peters, J. J., 79-3109 Peters, K. E., 79-2558 Peters, T., 79-670, 1226 Peters, T. A., 79-1911, 2839. 3109 Petersen, J. S., 79-787 (13), 911, 1697 Peterson, J. E., 79-616 Peterson, J. T., 79-1257 Péterson, O. V., 79-3384 Pethigargov, V., 79-376 Petreus, I., 79-1125 Petrova, R., 79-945 Petrova, Y.[E], N., 79-1272 Petrova, Z. I., 79-683 Petrovič, J., 79-344, 356, 3280 Petruk, W., 79-2216, 2821 Petryanov, I. V., 79-2259 Péwé, T. L., 79-70, 70 (1), 865 Pezerat, H., 79-1076, 2014 (1.3) Pfaff, N., 79-3106 Pfaffi, F., 79-1880 Pfeifer, H. R., 79-1462 Pfeiffer, L., 79-834 Pham Van Chuoc, 79-371 Phelps, D., 79-3231 (19) Phemister, J., 79-825, 1826 Philip, G. M., 79-1255 Phillip, G., 79-1797 Phillips, M. W., 79-165, 1117 Phillips, R. J., 79-556 Phillips, W. E. A., 79-771 (16) Phillips, W. J., 79-1049 Philpotts, A. R., 79-1693, 4208 Philpotts, J. A., 79-575, 12904 1519, 1529 Phinney, D., 79-643, 2572 Phinney, D. L., 79-2722 Phinney, W. C., 79-1516, 1524, 2740, 2741, 2743 Picard, M. D., 79-1810 Piccardo, G. B., 79-2483, 2924 Piccarreta, G., 79-3034 Piccirillo, E. M., 79-685 Pichavant, M., 79-2417 Pichler, H., 79-69 (7), 4169 Picot, P., 79-962, 1174, 2856, 2890 Pidgeon, R. T., 79-1056 (3.6), 1939, 3168 Pierce, J. W., 79-478, 479 Pierozynski, W. J., 79-3640 Pierrot, R., 79-962 Pies, W., 79-75 Piestrzyński, A., 79-4089 Pieters, C., 79-582, 2666 Piffard, Y., 79-1133 Piirainen, T., 79-819, 2170 Pike, R. J., 79-3940 Pikovskiy, Yu. I., 79-2467 Pilichowska, E., 79-2515 Pilkey, O. H., 79-3840 Pilkington, E. S., 79-2881, 3849 Pillai, K. S., 79-3071 Pillinger, C. T., 79-2680, 3909, Pilyankevich, A. N., 79-2334 Pineau, F., 79-443 Pines, D., 79-550 Pinet, M., 79-2007 (9) Pinnavaia, T. J., 79-2041 Piret, P., 79-214, 767, 3425 Pirlet, H., 79-2014 (3.9) Pisárčik, M., 79-344

Quintana, P., 79-345

Piskin, R., 79-1263 Pittman, E. D., 79-3236 (3) Pitmann, J. I., 79-2576 Piwinskii, A. J., 79-2313, 2403 Plakhov, G. F., 79-2123 Plançon, A., 79-2014 (1.4) Platt, J. P., 79-14, 932 Platt, R. G., 79-2789 Platte, Ch., 79-3416 Plieninger, T., 79-570, 1549 Plimer, I. R., 79-3525 Plint-Geberl, H. A., 79-1044 Ployart, D., 79-1399 Plumb, K. A., 79-491 Plummer, L. N., 79-2588, 2590 Plummer, P. S., 79-2959 Pluth, J. J., 79-170, 171, 2091 Poag, C. W., 79-71 (12) Pobedimskaya, E. A., 79-2103, 3349 (30), 3411 Pobeguin, Th., 79-2007 (4) Pobożniak, J., 79-3338 Podda, L., 79-323 Poddar, B. C., 79-3521 Podlesskiy, K. K., 79-1345 Podosek, F. A., 79-3920, 3980 Pohl, D., 79-135, 1105 Pohl, H., 79-2621, 2629 Poinsignon, C., 79-2026 Poirier, J. P., 79-3594 Póka, T., 79-4189 Polezhaeva, L. I., 79-662 Poll, G., 79-4242 Pollock, G. E., 79-2545 Polo, Diez, L., 79-49 Pol'shin, E. V., 79-1141 Ponder, R. D., 79-3106 Pongiluppi, D., 79-707, 2121, 2830 Poole, C. P., Jr., 79-4339 Poole, E. G., 79-1664 Poole, F. G., 79-1391 Poor, H. W., 79-2455 Poorter, R. P. E., 79-657 Popenko, G. S., 79-224 Popiel, H., 79-2471 Popkova, T. N., 79-1643 Poplavko, Ye[E]. M., 79-1427 Popov, V. A., 79-752 Popp, R. K., 79-3582, 3583, 3613, 3681 Poppi, L., 79-3299 Poreda, R., 79-2570 Porter, A. R. D., 79-1087 Portugal Ferreira, M., 79-3511 Poscolieri, M., 79-611, 3948 Posner, A. M., 79-1982, 3286 Poss, J. R., 79-3243 Postigo, R. P., 79-3349 (23) Potančok, M., 79-335 Potter, R. M., 79-3842 Potter, R. W., 79-1298, 2879 Potter, R. W., II, 79-3572, 3680 Potts, M. V., 79-3180 Potts, P. J., 79-2478 Pouit, G., 79-2149, 3524 Pouliot, G., 79-3799 Poullen J. F., 79-2438 Poupeau, G., 79-2673, 3155 Poupinet, G., 79-4361 Povarennykh, A. S., 79-1037, 1143 Povilatis, M. M., 79-1070 (IV.8) Powar, K. B., 79-1953, 2486

Powell, D., 79-771 (13) Powell, D. W., 79-1056 (2.3, 3.5) Powell, E. K., 79-334 Powell, M., 79-4173 Powell, T. G., 79-2014 (3.3), 2086 Powers, L. S., 79-1966 Prasolov, E. M., 79-1475 Prato, R., 79-4269 Pratt, D. D., 79-1514 Prédali, J.-J., 79-2163 Predeau, J.-J., 79-2163 Prescott, B. E., 79-661 Presley, B. J., 79-1262 Presnall, D. C., 79-1309, 4233 Preston, R. M. F., 79-2826 Prestridge, E. B., 79-3409 Prewitt, C. T., 79-4345 Price, D., 79-2221 Price, D. C., 79-2097 Price, G. P., 79-1841 Price, L. L., 79-235 Price, N. B., 79-239, 436 Price, N. J., 79-1058 Price, R. C., 79-1730 Price, W. F., 79-3214 Price, W. J., 79-1991 Prichard, H. M., 79-2976 Pride, D. E., 79-1392 Priem, H. N. A., 79-1948 Prince, E., 79-145 Principi, G., 79-4239 Pringle, I. R., 79-773 Prinn, R. G., 79-71 (4) Prins, P., 79-2158 (20) Prinz, M., 79-2728, 3983 Proietti, W., 79-3882 Proks, I., 79-261, 2377, 2378 Pronin, A. A., 79-3931, 3974 Propach, G., 79-3032, 3033 Protić, M., 79-69 (14) Protz, R., 79-2071, 3314 Proust, D., 79-102 Prouvost, J., 79-736, 737 Provost, A., 79-4194 Pryce, M., 79-3101 Pryce, M. W., 79-757 Pshenichnyy, G. N., 79-2857 Puchelt, H., 79-69 (11) Puchkov, Ye[E]., 79-2194 Pullaiah, G., 79-1930 Pullan, S., 79-3174 Pullar, W. A., 79-2076 Pulou, R., 79-1041, 2861 Purser, K. H., 79-3 Purtscheller, F., 79-3149 Purushottam, A., 79-3211 Pushcharovskii, D. Yu., 79-3382 Pushcharovsky, D. Yu., 79-3349 (30)Pushkar, P., 79-2579 Putnis, A., 79-317, 2748 Pye, M. F., 79-187 Pyman, M. A. F., 79-1982, 3286 Pytkowicz, R. M., 79-1453 Pyun, Su II, 79-2344 Qu, G., 79-2406 Quadros, L. P., 79-1437 Quaglia, P., 79-69 (9) Quareni, S., 79-163 Quick, J. E., 79-1530 Quinlivan, W. D., 79-4229

Quinn, J. G., 79-3216, 3864

Quintin, M., 79-2619 Quirk, J. P., 79-2039 Qureshi, R. H., 79-3327, 3328 Raabe, O. G., 79-2451 Raade, G., 79-2779 Raase, P., 79-701 Radbinovich, A. L., 79-2466 Radenac, A., 79-252 Radford, A. J., 79-2624 Radke, L. F., 79-1765 Radkevich, E. A., 79-1070 (V.3) Radkevich, Ye[E]. A., 79-2935 Radocinski, R. G., 79-578 Radtke, A. S., 79-1627, 1657, Ragab, A. I., 79-1711, 4195 Ragland, P. C., 79-3840 Raguin, E., 79-3440 Raha, B. N., 79-1096 Råheim, A., 79-10, 508 Rahman, A. M., 79-1157 Rahman, S., 79-2404 Rai, D., 79-1084 Rai, K. L., 79-431, 3488 Rai, U. S., 79-3677 Raina, B. N., 79-3248 (5) Rainville, G. D., 79-805 (13) Raisbeck, G. M., 79-3878 Rajamanickam, G. V., 79-3485 Rajan, S. S., 79-91 Rajeshwar, K., 79-2169, 3075, 4354, 4359 Ralph, R. L., 79-2668 79-2529, Ramamoorthy, S., Raman, C. V., 79-2787 Ramana Rao, N., 79-3489 Ramanujam, M., 79-2167, 2237 Rambaldi, E. R., 79-621 Ramberg, I. B., 79-787 (5, 6, 10), Ramdohr, P., 79-1503, 3244 Ramenskaya, M. E., 79-131 Ramírez-Sãenz, A., 79-2050 Rammensee, W., 79-539 Ramondetta, P. J., 79-2247 Ramsay, C. R., 79-1846, 3163 Ramsay, D. M., 79-773, 775 Rancitelli, L. A., 79-3950 Randles, M. H., 79-1066 (3) Ranesh, T. G., 79-2281 Rankin, A. H., 79-749, 1979 Rankin, P. C., 79-463 Rankin, R. S., 79-2609, 3906 Rankin, W. J., 79-2338 Rantala, R. T. T., 79-2617 Rao, A. T., 79-726, 2778, 2787 Rao, C. P., 79-2511 Rao, G. A., 79-2778, 2787 Rao, K. K., 79-3677 Rao, M. N., 79-566 Rao, P. P., 79-2778 Rao, P. S. C., 79-273 Rao, S. V. L. N., 79-2157 Rashid, M. A., 79-3861 Rasmussen, S. E., 79-55 Rastall, P., 79-1861 Ratajczak, T., 79-4090 Rau, H., 79-2289 Rauh, E. G., 79-320 Rausell-Colom, J. A., 79-2014 (1.2)

Rautureau, M., 79-2049 Ravaine, D., 79-2614, 2639, 2641 Ravanbakht, C., 79-313 Rawlinson, P. J., 79-3233 (III.8) Ray, I., 79-1096 Raybould, J. G., 79-1155 Raymahashay, B. C., 79-1466 Raymond, D., 79-925 Raymond, M., 79-137, 143, 144 Raymond, R. H., 79-70 (9) Raymond, W. H., 79-3505 Rayner, J. H., 79-1059 (2) Razenkova, N. I., 79-1427 Razo, M. L., 79-85 Read, J. F., 79-895 Read, P. G., 79-3758, 3771 Read, W. A., 79-1228 Reade, L. M., 79-1470 Reading, H. G., 79-2015 Reaves, G. A., 79-2055 Redalje, R. C., 79-3841 Reddy, V. V., 79-3523 Reece, D. E., 79-2248 Reed, G. W., Jr., 79-529, 554, 2706, 3969 Reed, R., 79-3064 Reed, R. P., 79-2724 Reed, S. J. B., 79-3995 Reed, T. B., 79-181 Reedy, R. C., 79-568, 577 Reesman, A. L., 79-2267 Reeves, C. V., 79-2903 Reeves, R. D., 79-3245 Rehfuss, D. E., 79-3937 Rehman, F.-U., 79-48 Rehtijarvi, P., 79-1476 Reiche, M., 79-671 Reichenbach, H. Graf von, 79-1603 Reid, A. M., 79-1537 Reid, D. F., 79-3880, 3881 Reid, D. L., 79-457, 3161 Reid, J. B., Jr., 79-1779 Reider, R. G., 79-3181 Reif, A., 79-166 Reik, G. A., 79-802 Reimer, T. O., 79-1235, 4262 Reimers, C. E., 79-875 Reinecke, K., 79-3349 (24) Reinson, G. E., 79-890 Reitsema, R. H., 79-2597 Remy, J. M., 79-3248 (7) Renard, D., 79-429 Rengasamy, P., 79-2074 Renton, B., 79-597 Repčok, I., 79-3156 Ressetar, R., 79-71 (5) Rex, D. C., 79-8 Reyf, F. G., 79-1209 Reynolds, J. H., 79-2722 Reynolds, P. H., 79-28, 1020 Reynolds, R. L., 79-1162, 4071 Rhoades, J. D., 79-100 Rhodes, E. R., 79-2083 Rhodes, J. M., 79-1490, 1516, 2972, 2973 Ribbe, P. H., 79-139, 165, 1104, 3374, 3387, 4025 Ribe, N. M., 79-3779 Ribeiro, A., 79-3512 Ribeiro, M. L., 79-4031 Ricci, C. A., 79-1951 Ricci, T., 79-3895

Rice, C. E., 79-180 Rice, C. M., 79-2885 Rice, D. K., 79-602 Rice, G. M., 79-1221 Richards, J. R., 79-15 Richardson, E. S., 79-988 Richardson, S. H., 79-1537, 2298, 2330, 3023, 3151 Richet, P., 79-257 Richter, D., 79-599 Richter, D. A., 79-805 (9) Richter, F. M., 79-71 (2), 3779 Richter, W., 79-4306 Rickey, F. A., 79-3225 Ricolfi, T., 79-2282 Ricoult, D., 79-3596 Riddihough, R. P., 79-4408 Riddle, C., 79-2643, 3831 Ridley, W. I., 79-2727 Ridsdale, P. D., 79-2629 Riech, V., 79-2469 Ried, H., 79-1612 Rieder, M., 79-2841 Ries, A. C., 79-1917, 1947 Riesel, G., 79-53 Rietmeijer, F. J. M., 79-4022 Riffaldi, R., 79-3305 Rigdahl, M., 79-2268 Riley, J. F., 79-2854 Rimsaite, J., 79-233, 1060 (E.2), 2014 (6.9) Rinaldi, R., 79-2141, 3349 (37) Rinehart, C. D., 79-4161 Ringwood, A. E., 79-319, 540 Rioche, D., 79-2014 (5.5), 3198 Ripinen, O. I., 79-385 Risbud, S. H., 79-1334 Rishworth, D. E. H., 79-1762 Risk, G. F., 79-3083 Rita, F.,.79-1951 Ritchey, J. L., 79-3736 Ritter, C. J., 79-1261 Rivalenti, G., 79-4190, 4191 Rivet, J., 79-190 Robbins, J. A., 79-2505 Robert, J.-L., 79-2391, 2393, 2804 Robert, M., 79-2014 (4.6) Robert, M.-C., 79-1300 Robert, P., 79-4258 Robért, R. V. D., 79-1994, 3210 Robert, U., 79-69 (15) Roberts, D., 79-448, 771 (4, 6), Roberts, E. F. I., 79-1861 Roberts, E. W., 79-3664 Roberts, J. C., 79-1790 Roberts, W. L., 79-4114 Roberts, W. P. H., 79-1389 Robertson, A. D., 79-1358 Robertson, A. H. F., 79-1203, 3003 Robertson, I. D. M., 79-2901 Robertson, I. M., 79-29 Robertson, J. A., 79-1060 (C.4) Robertson, R. S., 79-2215 Robie, R. A., 79-2302, 3557, 3558 Robin, C., 79-1743 Robin, P. L., 79-2552 Robin, P.-Y. F., 79-2271 Robinson, B. W., 79-4097

Robinson, C. S., 79-1392

Robinson, D. N., 79-712, 3233 Robinson, G., 79-3114 Robinson, P., 79-1854, 2785 Robinson, W. R., 79-180 Robson, M. J., 79-2325 Rochester, M. G., 79-4401 Rochow, F. G., 79-1065 Rochow, T. G., 79-1065 Rock, N. M. S., 79-831, 1690, 3649 Roddick, J. C., 79-1001, 2503 Roddy, D., 79-70 (12) Roddy, D. J., 79-3938 Rode, O., 79-3246 Rode, O. D., 79-3931 Rodek, E., 79-3416 Roden, M. F., 79-3185 Rodewald, H., 79-3098 Rodgers, G. P., 79-4044 Rodgers, K. A., 79-709, 2082 Rodgers, K. V., 79-1490 Rodrigues, B., 79-4410 Rodriguez, J., 79-3349 (73) Rodriguez-Reinoso, F., 79-2050 Roedder, E., 79-1510, 1552, 1555, 1560, 2320, 2697, 3247 Roeder, P. L., 79-2410, 2752 Roelandts, I., 79-2622, 2623, 2626, 3904 Roger, G., 79-1174 Rogers, D. E., 79-245, 4270 Rogers, D. S., 79-3492 Rogers, J. J. W., 79-885, 1932 Rogers, N., 79-3907 Rogers, P. J., 79-1152 Rogers, P. S., 79-308 Rogers, R. J., 79-4107 Roggiani, A. G., 79-4380 Rohde, A. G., 79-2573 Rohde, G., 79-182 Rojkovič, I., 79-4082, 4336 Rollinson, H. R., 79-2835 Romanchev, B. P., 79-1273 Romanenko, I. M., 79-3517 Romanowska, B., 79-222 Romary, Ph., 79-2673 Romey, W. D., 79-2566 Romig, A. D., Jr., 79-3971 Rona, P. A., 79-988, 1258 Ronca, L. B., 79-3974 Ronóv, A. B., 79-1449 Rönsbo, J. G., 79-3384 Roobol, M. J., 79-3163 Rooijmans, C. J. M., 79-1066 Roorda, H. J., 79-2199 Rooth, C., 79-1457 Rooth, C. G. H., 79-2455 Röpke, G., 79-2136 Ropp, R. C., 79-2345 Roquin, C., 79-1477 Rose, H. E., 79-4055 Rose, H. J., Jr., 79-1564, 1565, 4081 Rose-Hansen, J., 79-450 Rosenberg, R. J., 79-428, 3830 Rosenberg, P. E., 79-3711 Rosenvold, R., 79-2169 Rosholt, J. N., 79-1471 Rösler, H., 79-105 Rösler, H. J., 79-105, 166, 363, 716, 1576 Rosman, K. J. R., 79-2637, 2715 Ross, D. K., 79-2014 (2.3)

Ross, D. L., 79-1230 Ross, F. K., 79-3355, 3709 Ross, G. J., 79-360 Ross, J. V., 79-4156 Ross, M., 79-665 Ross, R. G., 79-2335 Rossi, A., 79-1819, 4190, 4191 Rossi, G., 79-708, 2625, 4004 Rossi, P. M., 79-4240 Rösslin, Eucharius, 79-76 Rossman, G. R., 79-202, 1594, 1595, 3111, 3365, 3842 Roth, I., 79-3002 Roth, L. E., 79-556 Roth, R. S., 79-1134, 1135 Rotty, R. M., 79-3543 Rouse, K. D., 79-1128, 1129, 2127 Rousset, C., 79-3530 Rousseaux, J.-M., 2024 Routhier, P., 79-1174, 3442 Routson, R. C., 79-3308 Rouveyrol, P., 79-2163 Roux, J., 79-2423, 3751 Roux, P., 79-1326 Rouxhet, P. G., 79-2031, 2552 Rovsha, V. S., 79-2786 Rowe, C. D., 79-1564 Rowe, J. J., 79-2628 Rowe, M. W., 79-3987 Rowland, S. J., 79-2546 Rowlands, N. J., 79-1184 Roy, A. B., 79-3020, 3486 Roy, D. C., 79-805 (9) Roy, J. L., 79-4370 Roy, S., 79-427, 3816 Roy, S. D., 79-845 Roy, Supriya, 79-4292 Rozendal, A., 79-2158 (16) Rozenson, I., 79-2065 Rozhdestvenskaya, I. V., 79-1113, 2105 Rozinov, M. I., 79-1745 Rozinova, E. L., 79-680 Rozložnik, L., 79-4303 Rub, M. G., 79-1070 (III.11) Ruberti, E., 79-1569 Rubinstein, I., 79-2586 Ruch, R. R., 79-241, 506, 1439 Rucklidge, J. C., 79-1695 Rudashevskii, L. S., 79-327 Rudashevskii, N. S., 79-748, 762 Ruddock, D. I., 79-3657, 3658 Rudee, M. L., 79-1572 Rudeforth, C. S., 79-2254 Rudman, R., 79-1067 Rudnitskaya, E. S., 79-2014 (1.5), 4085Ruff, A. W., 79-2724 Ruffino, G., 79-2272 Ruh, R., 79-1312 Ruhlmann, F., 79-2856, 3510 Rule, J. H., 79-476 Rumanova, I. M., 79-2129 Rumble, D., III, 79-267, 488, 3874, 4126 Runciman, W. A., 79-2097 Runcorn, S. K., 79-543, 559, Rundkvist, D. V., 79-3519 Rundle, C. C., 79-1004 Rundqvist, D. V., 79-1745 Runkle, D., 79-3175 Ruotsalainen, A., 79-2170

Rusek, J., 79-371 Russell, C. T., 79-592, 593 Russell, D. A., 79-3236 (7) Russell, D. J., 79-3306 Russell, G. M., 79-3218 Russell, J. D., 79-87, 3265 Russell, M. J., 79-1056 (4.2), 2174 Russell, W. A., 79-2452, 3962 Rust, B. R., 79-2529 Rutherford, M. J., 79-1539 Rutland, R. W. R., 79-932 Rutsein, M. A., 79-4033 Rutter, E. H., 79-3590, 3598 Ruzhich, V. V., 79-2908 Ruzicka, V., 79-1060 (C.3) Ryabchikov, I. D., 79-1070 (IV.9) Ryall, P. J. C., 79-3661 Ryan, A. B., 79-2912 Ryan, B. S., 79-2901 (14) Ryan, J., 79-81 Ryan, P. D., 79-780, 781 Ryan, W. B. F., 79-1755, 3128 Ryburn, R. J., 79-1961 Ryder, G., 79-557, 1517, 2688 Rye, R. O., 79-1197, 1391 Ryerson, F. J., 79-1291 Rykart, R., 79-3093, 3095, 4377 Ryzhova, R. I., 79-662 Saadallah, A., 79-1667 Saal, E. W., 79-2158 (25) Saalfeld, H., 79-174, 3359, 3700

Saavedra, J., 79-1070 (III.12). 4185 Sabatier, G., 79-3331 Sabatini, G., 79-2257 Sabatino, B., 79-4312, 4313 Sabelin, T., 79-638 Sabelli, C., 79-186, 197, 1140, 3362, 3421 Sabine, P. A., 79-2914 Sabins, F. Floyd, Jr., 79-1068 Sabouraud, C., 79-703, 3785 Saburi, S., 79-2784 Sachanbinski, M., 79-1360, 4036 Sackett, W. M., 79-1297, 2286, 2544, 2553, 3881 Sadanaga, R., 79-3340, 3349 (15)Sadler, D. M., 79-3344 Saeed, E. M., 79-2577, 3326 Saehr, D., 79-2043 Saemundsson, K., 79-1056 (5.1) Safronov, D. N., 79-2520 Saha, A. K., 79-13 Sahama, Th. G., 79-2810 Sahl, K., 79-1108 Sahu, K. N., 79-3249 (9) Saini, H. S., 79-1952, 4012 Saint-Joanis, R., 79-2921 Saint-Leu, C., 79-1301 Saito, K., 79-3978 Saito, Y., 79-930, 3005, 3398 Saitta, M., 79-3516 Saiz-Jimenez, C., 79-3318 Sakae, T., 79-1146 Sakai, H., 79-293, 2525, 3843 Sakata, M., 79-2127 Saklani, B. S., 79-3248 (2) Saklani, P. S., 79-3248 Sakurai, K., 79-4027

Sakuyama, M., 79-54, 4200

Sałacinski, R., 79-1201 Salamon, W., 79-4089 Saleeby, J., 79-1780 Salha, C., 79-2046 Saliot, P., 79-3785 Salisbury, M. H., 79-1873, 2987 Salje, E., 79-3357 Salski, W., 79-222 Salter, D. C., 79-1271 Saltzman, S., 79-2051, 3251 Samaddar, B. N., 79-328 Samajová, E., 79-3301 Samarkina, Ye[E]-Ya., 79-2068 Samartsev, I. T., 79-3483 Sameshima, T., 79-709 Samoilov, V. S., 79-731, 901 Samoilovich, M. I., 79-1622 Samuelsson, L., 79-4006 Sanders, I. S., 79-882, 4181 Sandomirskii, P. A., 79-2093, 2120 Sangster, D. F., 79-21, 418 Sankaran, A. V., 79-3456 Sant, B. R., 79-2165 Santarem Andrade, R., 79-3511 Santos, A. M., 79-2539 Santos Oliveira, J. M., 79-2600, 2601, 3512 Santschi, P. H., 79-2533 Sanz, J., 79-2014 (1.2), 3376 Sapountzis, E. S., 79-4192 Sapozhnikov, A. N., 79-1110, Sapozhinkova, N. G., 79-2068 Sarazin, G., 79-2585 Sarcia, C., 79-1088 Sargeant, D. A., 79-3349 (76) Sargent, K. A., 79-4229 Sarkar, A., 79-2937 Sarkar, S. N., 79-13 Sarma, V. A. K., 79-114, 2074 Sartin, A. A., 79-1812 Sartori, F., 79-3305 Sasaki, A., 79-2489 Šašek, L., 79-282 Sassen, R., 79-3110 Sassi, F. P., 79-2802 Sastri, S. R. S., 79-1980 Sato, M., 79-2014 (1.8), 2896 Sato, T., 79-695, 2350 Sato, Y., 79-1863 Satyanarayana, K., 79-885 Sauer, F. M., 79-3938 Saul, J. M., 79-393, 394 Saunders, A. D., 79-2492, 2974, 3821, 3838 Saunders, E., 79-2238 Saunders, M. J., 79-3207 Saunders, R. S., 79-581, 617, Saupé, F., 79-1836 Sauve, P., 79-3799 Savascin, M. Y., 79-69 (16) Savelle, J., 79-1430 Savkevitch, S. S., 79-1643 Sawada, Y., 79-3674 Sawhney, B. J., 79-2025 Sawhney, B. L., 79-2063 Sawkins, F. J., 79-1160 Saxena, M. N., 79-3248 (15) Saxena, S. K., 79-928, 1486

Sayeed, U., 79-2686 Sayegh, A. H., 79-81

Sayin, M., 79-1603, 2014 (2.8)

Sayles, F., 79-2362 Sayles, F. L., 79-3877 Scala, C. M., 79-161 Scalan, R. S., 79-2449 Scambos, T., 79-1562 Scandale, E., 79-3342, 3673 Scarfe, C. M., 79-2313, 2316, 2317 Schaal, R., 79-1507 Schaal, R. B., 79-2264 Schadow, E., 79-1042 Schaefer, B., 79-3682 Schaefer, R. G., 79-3862 Schaefer, S. C., 79-1319 Schaeffer, G. A., 79-1534 Schaeffer, H. A., 79-2315 Schaeffer, O. A., 79-570, 1497, 1534, 1549, 3991 Schäfer, W., 79-189 Schärer, U., 79-909 Schebesta, K., 79-1897 Scheidegger, K. F., 79-1018 Scheihing, M. H., 79-1807 Schenk, P. E., 79-771 (18) Schellmann, W., 79-2459 Schenk, R. E., 79-771 Scherfig, J., 79-1265 Schermerhorn, L. J. G., 79-2159, 4220 Schidlowski, M., 79-2509, 3851 Schifer, D., 79-2277 Schiller, E., 79-3349 (75) Schilling, J.-G., 79-1410, 2475, 2969, 2970 Schindler, R., 79-53 Schink, D. R. 79-3880 Schleicher, H., 79-832 Schleicher, J. A., 79-242, 506 Schlenker, J. L., 79-170 171 Schmerling, D., 79-979 Schmetzer, K., 79-388, 398, 1592, 2435, 2436, 2769, 2781, 2891, 4021 Schmid, R., 79-1267, 2299, 3585 Schmidt, D., 79-1642 Schmidt, H.-G., 79-1749 Schmidt, R. G., 79-3496, 3499 Schmidt, U., 79-1190 Schmidt, W., 79-716 Schmitt, J.-M., 79-3478 Schmitt, L. J., 79-3505 Schmitt, R. A., 79-289, 639, 1530, 2700 Schmitz, H.-H. 79-2205 Schmutz, H.-U., 79-4304 Schneer, C. J., 79-3332 Schneider, E., 79-572 Schneider, H. J., 79-2184 Schneider, J. R., 79-3347 (18) Schneider, W., 79-397 Schnepfe, M. M., 79-3900 Schnitzer, M., 79-3316, 3865 Scholl, H., 79-1402 Scholle, P. A., 79-1069 Scholz, C. H., 79-276 Schomburg, J., 79-1074, 1642 Schonfeld, E., 79-590 Schoonheydt, R. A., 79-2042 Schopf, J. M., 79-889 Schöttler, G., 79-3086 Schrader, E. L., Jr., 79-476 Schrader, H.-W., 79-397 Schramm, R. E., 79-2724 Schreiber, E., 79-595

Schreiber, H. D., 79-1511 Schreuder, F. J. G., 79-2158 (17) Schreyer, W., 79-1336, 3037 Schröcke, H., 79-2340 Schroeder, B., 79-69 (17) Schroeder, L. W., 79-209, 2142 Schroeder, R. A., 79-1002, 1416 Schrön, W., 79-741 Schubert, G., 79-1922, 3236 (12) Schubert, W., 79-4186 Schuhmann, P. J., Schuhmann, S., 79-1519, 1529 Schuiling, R. D., 79-1837, 3780 Schülke, W., 79-3349 (20) Schult, A., 79-4409 Schultz, L., 79-3908 Schultz, L. G., 79-44, 3302 Schultz, P. H., 79-2657, 3947 Schulz, H., 79-1268, 3349 (71), Schulze, D. T., 79-3233 (IV.2, IV.5) Schulze, O. D., 79-908 Schust, F., 79-1070 (II.6) Schuster, H. D., 79-205 Schutz, H., 79-1123 Schwarz, E. J., 79-4365 Schwarcz, H. P., 79-422, 1451, 2456 Schwartz, S., 79-2351 Schwarz, K., 79-1123 Schwarz, L. J., 79-2628 Schweitzer, E. L., 79-2788 Schwerdtner, W. M., 79-1678 Schwertmann, U., 79-2014 (6.1), 2034, 3258 Sclater, J. G., 79-4362 Scordari, F., 79-3673 Scotese, C. R., 79-3236 (18) Scott, A. D., 79-2014 (1.1) Scott, D., 79-3254 Scot, D. C., 79-228, 229, 2228–2230, 2232, 2234–2236 Scott, D. H., 79-588 Scott, E. L., 79-1750 Scott, E. R. D., 79-2729, 2731, 3995 Scott, J. D., 79-70 (10) Scott, P. D., 79-332 Scott, R. B., 79-2497 Scott, R. H., 79-2013 (1.2) Scott, S. D., 79-2851 Scottford, D. M., 79-3192 Scrudato, R. J., 79-1246 Seager, A. F., 79-1623, 1815 Sealy, H. A., 79-1472 Searcy, A. W., 79-334 Searle, R. G., 79-2971 Sears, D. W., 79-1578 Seddoh, K. F., 79-3450 Sedlacek, P., 79-182, 3349 (24) Sedova, I. S., 79-2825 Seemann, R., 79-970 Segalstad, T. V., 79-1588, 1640 Segnit, E. R., 79-2881, 3007 Seidel, E., 79-1838 Seidemann, D., 79-1933 Seiders, V. M., 79-1026, 4166 Seifert, F., 79-927, 1590, 2108, 3061, 3710 Seifert, K.-F., 79-4343 Seifert, W. K., 79-1434, 2584 Seim, R., 79-1070 (III.13)

Seitz, M. G., 79-277, 286-288, 292, 305, 628 Sekikawa, Y., 79-2126 Sekula, J., 79-1390 Sekulić, M., 79-949 Selleck, B. W., 79-3012 Sellschop, J. P. F., 79-1860 Semenov, E. I., 79-4098 Semenova, T. F., 79-1113 Semet, M. P., 79-2001 Sempels, J.-M., 79-4050 Sempère, R., 79-2861 Sen, N., 79-1977 Senchilo, N. P., 79-1070 (II.4) Senechal, R. G., 79-1025 Senesi, N., 79-3865 Sengör, A. M. C., 79-2895, 2988 Sengör, C., 79-3138 Sen Gupta, J. G., 79-2630 Sen Gupta, N. R., 79-1567 Sen Gupta, P. R., 79-1567 Senina, V. A., 79-2827 Senior, H., 79-485 Serantoni, E. F., 79-3431 Serdobova, V. I., 79-2465 Sergeev, N. A., 79-3349 (51) Serment, R., 79-3508 Serna, C. J., 79-2014 (2.10), 2801, 3297 Serrano, L. 79-2080 Serratosa, J. M., 79-2014 (1.2, 2.1) Sesjardins, L. E., 79-1324 Sethna, S. F., 79-4284 Seto, H., 79-1073, 1078 Ševc, J., 79-3587 Seward, T., 79-2380 Seward, T. M., 79-2381 Seya, K., 79-939 Seydel, R., 79-153 Seyfried, W. E., Jr., 79-1093 Sha, Q., 79-2358, 3004 Shaalon, M. M. B., 79-1479, 3309 Shackleton, N. J., 79-3850 Shadlun, T. N., 79-2857 Shah, S. K., 79-3248 (4) Shaham, J., 79-550 Shaked, H., 79-1136 Shamir, N., 79-1136 Shams, F. A., 79-111 Shaner, J. W., 79-3573 Shankland, T. J., 79-1876 Shanks, W. C., III, 79-1093 Shannon, P. M., 79-829, 2996 Shannon, R. D., 79-3349 (38), 4351 Shao, J., 79-2306 Shapkin, O. P., 79-2762 Shapovalov, V. I., 79-263 Sharapov, V. N., 79-3021 Sharma, K. K., 79-3487 Sharma, O. P., 79-4012 Sharma, S. K., 79-3559, 3584, 3611, 3615-3617, 3632 Sharov, A. S., 79-148 Sharp, W. E., 79-2285 Sharry, J., 79-2413 Shaub, B. M., 79-399 Shaw, C. F., III., 79-4057 Shaw, D. M., 79-1276, 1292, 2473, 2498 Shawe, D. R., 79-1391, 2397 Shaw, I. M., 79-2014 (5.3)

Shaw, R., 79-3773 Shaw, T. M., 79-1975 Shcheglov, A. D., 79-2153 Shcheka, S. A., 79-3042 Shcherba, G. N., 79-1070 (11.4) Shcklayr, V. P., 79-3349 (77) Sheard, M. J., 79-1959 Shearman, D. J., 79-3217 Shedlock, R. J., 79-4287 Shee, S. R., 79-3233 (II.2) Sheldrick, G. M., 79-3431 Shelford, P. H., 79-69 (18) Shelton, G. L., 79-3599 Shelukhin, V. I., 79-2195 Shen, B., 79-2768 Shepelev, Yu. I., 79-3349 (41) Shepherd, T. J., 79-749 Sheppard, S. M. F., 79-3229, 3580, 3703, 3704, 3738 Shepperd, R. A., 79-1618 Sherer, R. L., 79-4288 Sheridan, D. M., 79-1856, 3504, Sheridan, M. F., 79-70 (2,6) Sherman, S. I., 79-2908 Shevaleevsky, I. D., 79-3934, Shevchenko, V. N., 79-1384 Sheymovich, V. S., 79-2963 Shibuya, G., 79-2864 Shido, F., 79-2951 Shieh, Y.-N., 79-1451, 3233 Shigeno, H., 79-2523 Shih, C.-Y., 79-1540 Shikazono, N., 79-1469 Shima, M., 79-631, 3984 Shimamura, T., 79-2526, 4000 Shimazaki, H., 79-2765, 2859, 2894, 3462 (4) Shimazu, M., 79-1984, 2124 Shimizu, N., 79-287, 417, 2001 Shimoda, S., 79-2056 Shimp, N. F., 79-240, 241, 1439 Shiraki, K., 79-4245 Shishido, T., 79-270 Shishkin, N. N., 79-762 Shive, P. N., 79-3498 Shlyapkina, E. N., 79-1040 Shmakin, B. M., 79-696, 902, 2823, 3349 (78), 4045 Shoda, T., 79-405 Shoemaker, E., 79-70 (12) Shoemaker, E. M., 79-615 Shoemaker, G. L., 79-213, 1038 Shoji, S., 79-2075 Shoji, T., 79-3462 (3) Sholkovitz, E. R., 79-239, 1454, 1455 Shou, M.-Y., 79-1416 Shoval, S., 79-3272, 3273 Shubha, V., 79-2281 Shuldiner, V. I., 79-3042 Shuman, L. M., 79-3325 Shumara, O. A., 79-2762 Shurubor, Y. V., 78-2454 Shuto, K., 79-1938, 2982 Shvedenkov, G. Yu., 79-2373 Sibbald, T. I. I., 79-803, 1060 (E.4, E.5)Sibley, D. F., 79-1609 Siddiqui, S. F. A., 79-740 Siddiquie, H. N., 79-3485 Sidorenko, O. V., 79-1112

Sidorov, V. M., 79-2906 Siebert, R. M., 79-2360, 2361 Siedlecka, A., 79-877 Siegel, B. Z., 79-1256 Siegel, F. R., 79-478, 479 Siegel, S. M., 79-1256 Siegfried, R. W., II, 79-599 Siemes, H., 79-3606 Siemon, J. E., 79-1213 Siffert, B., 79-99, 1075, 2014 (4.1, 5.5), 3198Sighinolfi, G. P., 79-2563 Sigleo, A. C., 79-1386, 2550 Signer, P., 79-3955 Sigurdsson, H., 79-2969, 2970 Sigurdsson, S., 79-1459 Sikora, W., 79-3349 (2) Silberman, M. L., 79-1019, 1028, 1744, 3183 Silva, J. M. L. U., 79-1569 Silver, E. A., 79-1775 Simmons, E. C., 79-2457 Simmons, G., 79-599 Simmons, M. B., 79-1232, 2220 Simms, P. C., 79-3225 Simon, F. O., 79-1733 Simon, R. I., 79-876 Simonds, C. H., 79-2681, 2741, 2743-2745, 1516, 1524 Simoneit, B. R. T., 79-496 Simonov, M. A., 79-2093, 2094, 2120, 2128, 2130, 2143, 2145, 2416, 3349 (39), 3419, 3426 Simonov, V. I., 79-1127 Simons, B., 79-1528 Simonsen, H. A., 79-2016 Simony, P.S., 79-3052 Simpson, C., 79-1583 Simpson, E. S. W., 79-4362 Simpson, F. M., 79-4015, 4059 Simpson, P. R., 79-2874 Sing, S. S., 79-3282 Singer, A., 79-108 Singer, R. B., 79-584 Singer, S. F., 79-1485 Singh, J. B., 79-3249 (18) Singh, S., 79-3166 Singhal, J. P., 79-2030, 3296 Sinha, A. K., 79-3249 (36) Sinha, J., K., 79-842 Sinha Roy, S., 79-2907 Sinigoi, S., 79-1714, 2806, 4196 Sinton, J. M., 79-1730 Sircar, A., 79-3741, 3742 Sirieys, P., 79-1301 Sivalov, E. G., 79-3383 Sivertsen, A., 79-782 Sivtsov, A. V., 79-4084, 4085 Sjoberg, J. J., 79-1243 Skehan, J. W., 79-805 (2) Skei, J., 79-2246 Skelhorn, R. R., 79-452, 3806 Skelton, E. F., 79-2278 Skevington, D., 79-781 Skhirtladze, N. I., 79-2828 Skinner, A. C., 79-2904 Skinner, B. J., 79-1632 Skinner, D. L., 79-2158 (34) Skippen, G. B., 79-1458 Skinner, W. R., 79-2158 (34) Skowronek, C., 79-2189 Skublov, G. I., 79-61 Škvor, V., 79-1070 (II.5)

Slack, J. F., 79-1627 Slatt, R. M., 79-70 (4) Sleep, N. H., 79-2968 Slootweg, A. P., 79-3131 Slyukova, Z. V., 79-1061 Smalley, I. J., 79-1987 Smart, R. St. C., 79-274 Smet, T., 79-2623 Smetannikova, O. G., 79-3349 (45)Smethie, W. M., Jr., 79-2592 Smirnov, G. I., 79-2762 Smith, A. G., 79-4146, 4394 Smith, C. B., 79-3233 (III.1) Smith, D., 79-3185, 3233 (IV.1, IV.4) Smith, D. A., 79-2535 Smith, D. C., 79-906, 3723 Smith, D. K., 79-2095 Smith, E. I., 79-1734 Smith, E. J., 79-3236 (15) Smith, G., 79-3058, 3059, 3380 Smith, G. E., 79-3506 Smith, G. I., 79-1769 Smith, J. E. M., 79-862, 2491 Smith, J. V., 79-170, 171, 537, 847, 1115, 1518, 2647, 2682, 2807, 4005 Smith, J. W., 79-416, 2521 Smith, L. 79-236 Smith, P., 79-3747 Smith, P. P. K., 79-4333 Smith, R. A., 79-1056 (3.1) Smith, R. C., II., 79-976 Smith, R. T., 79-1170 Smith, S. V., 79-3841 Smith, T. E., 79-3831 Smith, T., 79-183, 596 Smith, W. Campbell, 79-983 Smithson, S. B., 79-957, 2444, Smolin, Yu I., 79-3349 (41) Smykatz-Kloss, W., 79-1204 Smyslov, A. A., 79-1405 Smyth, W.R., 79-2912 Snethlage, R., 79-269, 727 Snetsinger, K. G., 79-2840 Snow, R. E., 79-1227 Snowdon, L. R., 79-2086 Snyder, G. L., 79-4213 Snyder, R. L., 79-2125 Snyder, W. S., 79-2204 Sobieckí, A., 79-2002, 2003 Sobolev, V. S., 79-2916 Soboleva, S. V., 79-1112, 3349 (48)Sobott, R. J. G., 79-3070 Soderblom, L. A., 79-591, 592, 594 Sofer, Z., 79-2591 Soga, N., 79-598 Sokolov, P. B., 79-662 Sokolov, S. V., 79-722 Sokolova, M. N., 79-1061 Sokolova, V. N., 79-3519 Soldatos, K., 79-698 Soler, P., 79-3439 Solntsev, V. P., 79-385 Solomon, S. C., 79-552 Solov'eva, L. P., 79-2144 Solovova, I. P., 79-1272 Solov'yev, A. A., 79-2467 Somayajulu, B. L. K., 79-626 Somiya, S., 79-1132

Sommerauer, J., 79-670, 1226, 1586, 2923 Sonet, J., 79-1945 Sonnett, C. P., 79-547, 551 Soong, R., 79-3008 Soper, N. J., 79-818 Sørensen, H., 79-3232 (5) Søtofte, I., 79-3349 (36), 3375 Sotowicz, B. A., 79-3349 (46) Sotskov, Yu, P., 79-2465 Sougy, J., 79-771 (25) Soula, J.-C., 79-4049 Soulié, M., 79-3451 Souriau, M., 79-1922 Southam, J. R., 79-71 (16) Southard, A. R., 79-122 Souza, M. Bernardo de, 79-3512 Soyfer, U. N., 79-2593 Sozanski, A. G., 79-2530 Spain, I. L., 79-2278 Spanos, T. J. T., 79-1878 Sparks, R. S. J., 79-1746, 1747 Spear, F. S., 79-4126, 4324 Spears, D. A., 79-1981, 2510, 3888 Speer, J. A., 79-745 Speight, J. M., 79-1698 Spettel, B., 79-535, 1531, 3908 Spetzler, H., 79-598 Spiers, C. J., 79-3607 Spiridonov, E. M., 79-3411, 4112 Spiro, B., 79-3313 Spitz, G., 79-434 Spjeldnaes, N., 79-1056 (3.2) Spoljaric, N., 79-2252, 3547 Spooner, E. T. C., 79-40, 1176 Sposito, G., 79-2305 Springlet, M., 79-1025 Springs, M. J., 79-2016 Sprunt, E. S., 79-1303 Spudich, P. K. P., 79-2987 Spudis, P., 79-3981 Spudis, P. D., 79-2656 Spyckerelle, C., 79-2586 Squirrell, H. C., 79-2223, 2995 Sridhar, K., 79-419, 2534 Srikantia, S. V., 79-3248 (3) Srinivasan, R., 79-4316 Srivasta, R. C., 79-3283 Srivastava, D. C., 79-884 Srnka, L. J., 79-565, 2264 Środoń, J., 79-2014 (3.2) Srour, B., 79-3349 (69) Stacey, J. S., 79-3164 Staehle, V., 79-1581 Stahl, W. J., 79-2540 Stähle, V., 79-572 Stakes, D., 79-3847 Stalder, H. A., 79-1890, 4379 Stanaway, K. J., 79-1390 Stanley, C. J., 79-2207, 2853 Stanton, R. L., 79-933, 1389, 2158 (31), 2201 Starke, R., 79-105, 363 Starkey, J., 79-3027, 3197 Starmer, I. C., 79-913 Stashkov, G. M., 79-4065 Statham, P. M., 79-393, 394 Staudacher, T., 79-1550 Stauffer, M. R., 79-4293 Stauffer, R. E., 79-3886 Steacy, H. R., 79-1060 (B.1) Stearns, C. E., 79-1006 Steckler, M. S., 79-1928

Steel, R. J., 79-771 (9) Steele, I. M., 79-1518, 2091, 2682 Steele, K. F., 79-2535 Steele, T. W., 79-51, 2609, 2620, 2624, 3906 Steen, B.-G., 79-484 Steensma, J. J. S., 79-2199 Stefanova, M., 79-454, 809 Stefanovits, P., 79-2014 (4.2) Steffen, R. M., 79-3225 Steggert, M. A., 79-2650 Stehli, F. G., 79-71, 3236 Steinberg, D. J., 79-3573 Steinen, R. P., 79-1472, 3017 Steiner, A., 79-1672 Steinitz, G., 79-1007 Steinnes, E., 79-2 79-2631, 2633, 3898, 3901 Şteger, H. F., 79-1324 Štemprok, M., 79-330, 1070, 1070 (IV.10), 1322 Stendal, H., 79-2602 Stengelin, R., 79-2652, 4169 Stepanov, V. I., 79-4099 Stephens, M. E., 79-3349 (16) Stephens, W. E., 79-654 Stephenson, A., 79-559, 2680, 2707, 3909 Stephenson, E. J., 79-4 Stephenson, R., 79-2944 Stepisiewicz, M., 79-900 Stepkowska, E. T., 79-2014 (5.4)Stępniewski, M., 79-754 Stern, C., 79-1782, 2989 Stern, C. R., 79-1308, 1783, 3838 Stern, R. J., 79-2981 Stern, W. B., 79-2642 Sterzel, W., 79-3416 Stesky, R. M., 79-597 Stetter, J. R., 79-602 Stettler, A., 79-2493, 2658 Stevens, G. R., 79-119 Stevens, N. C., 79-1758 Stevenson, J. S., 79-2867, 4106 Stevenson, L. S., 79-2867, 4106 Števula, L., 79-344, 356, 3280 Stewart, D. B., 79-1694 Stewart, D. C., 79-3233 (II.10) Stewart, J. M., 79-1632, 3406 Stewart, R., 79-1871 Stiegler, S. E., 79-1071 Stillman, C. J., 79-2919, 3003 Stipp, J. J., 79-1457 Stith, J. L., 79-1765 Stoch, H., 79-51, 2603, 2609, 3906 Stoch, L., 79-3285, 4043 Stoecklin, D., 79-1891 Stoeser, D. B., 79-4175 Stoeser, D. G., 79-3164 Stoffa, P. L., 79-1927 Stöffler, D., 79-1515 Stol, R. J., 79-84 Stolper, E., 79-2712, 3988 Stolper, E. M., 79-1499, 2717 Stolyarova, A. N., 79-3781 Stone, C., 79-1763 Stone, G. T., 79-467 Stone, M., 79-1398, 1700 Stone, M. H., 79-1080

Stone, W. E. E., 79-3376

Stork, A. L., 79-3231 (22) Störr, M., 79-1074 Storzer, D., 79-2676 Stotzky, G., 79-3317 Stout, M., 79-1636 Stover, D. W., 79-243 Stow, S. H., 79-438 Stowe, C. W., 79-2158 (29) Stoyanov, I. G., 79-69 (5) Strain, P. L., 79-576 Strangway, D. W., 79-645 Strasheim, A., 79-2013 (1.2) Strasser, A., 79-965, 3097 Strausz, O. P., 79-2586 Streckeisen, A., 79-1688, 2913 Strelow, F. W. E., 79-1999 Strizhkova, A. A., 79-1070 (II.2), Strong, D. F., 79-3231 (16), 4206, 4207 Stroud, R. M., 79-129 Stroup, J. B., 79-3139 Strübel, G., 79-3682 Struemer, D. H., 79-2558 Strunz, H., 79-1654, 3244 Stuart-Alexander, D. E., 79-592 Stubbs, D., 79-17 Stucki, J. W., 79-2014 (1.7) Stude, G. R., 79-3186 Stueber, A. M., 79-3180 Stuiver, M., 79-1937 Stukas, V. J., 79-1020 Stul, M. S., 79-2045 Stumpfl, E. F., 79-2158 (21, 22) Sturman, B. D., 79-2883, 4014, 4120, 4123 Sturt, B. A., 79-771 (1, 3, 4, 7), 773, 775, 4237 Stussi, J.-M., 79-1704 Stuve, J. M., 79-1338 Su, S., 79-1978 Subramanyam, K. N., 79-2342 Substyk, D., 79-2516 Suda, K., 79-706 Sudarsanan, K., 79-211, 212, Sudo, T., 79-1146, 2014 (3·1), 2893-Suensilpong, S., 79-3167 Suess, E., 79-3863 Sugimato, M., 79-1066 (5) Sugimori, K., 79-3378 Sugitani, Y., 79-2790, 2858 Suhner, B., 79-1363 Suito, K., 79-248 Sukhov, H. G., 79-2460 Sullivan, K. D., 79-1681 Sumino, Y., 79-939 Sumiyoshi, Y., 79-316 Sun, S., 79-1407 Sun, W., 79-2461 Sunagawa, I., 79-1608, 3562, 3770 Sundvoll, B., 79-787 (4) Sung, C.-M., 79-584 Sunwall, M. T., 79-2579 Suppe, J., 79-870 Suquet, H., 79-1076 Surcan dos Santos, L. C., 79-435 Surdam, R. C., 79-3859 Surkov, Yu. A., 79-3975 Suschny, O., 79-3897 Suslina, L. G., 79-3349 (62)

Suslova, S. N., 79-1696

Sutcliffe, R. H., 79-1678 Suthar, K. M., 79-566 Sutherland, F. L., 79-17 Sutter, J. F., 79-4247 Sutton, F. M., 79-2283 Suwa, K., 79-77 Suyari, K., 79-930 Suzak, N. J., 79-2351 Suzuki, I., 79-939 Suzuki, M., 79-2253 Suzuki, S., 79-3414 Suzuoki, T., 79-3782, 3783 Svisero, D. P., 79-4076 Swain, C. J., 79-1915 Swanberg, C. A., 79-956 Swanenberg, H. E. C., 79-2304 Swanson, S. E., 79-1737 Swanson, S. M., 79-1741 Sweeney, J. F., 79-2747 Swift, R. S., 79-1059 (3) Switowski, Z. E., 79-3963 Swulius, T. M., 79-490 Syers, J. K., 79-3271 Sylvester, A. G., 79-2948 Symes, R. F., 79-4077 Symons, D. T. A., 79-999, 1931 Syneček, V., 79-3349 (22) Szymański, J. T., 79-3405, 3406, 3663

Taborszky, F., 79-3230 Taddeucci, A., 79-3809 Tadini, C., 79-2122 Taft, M. B., 79-915 Tagai, T., 79-3349 (42) Taher, R. M., 79-1711 Tainosho, Y., 79-3783 Tait, J. M., 79-1086 Takahashi, E., 79-2310, 2375 Takahashi, H., 79-527, 2735 Takano, Y., 79-2820 Takaoka, N., 79-413 Takazawa, K., 79-2750 Takeda, H., 79-1553, 3340 Takeshita, H., 79-2794, 2939 Takeshita, Y., 79-706
Takeuchi, Y., 79-172, 1106
Takeuchi, Y., 79-3349 (15), 3360, 3371, 3420 Takubo, H., 79-3762, 3763 Talati, D. J., 79-705 Talbot, C. J., 79-4294 Talibudeen, O., 79-3259 Talukdar, S. C., 79-1839 Talwani, M., 79-1056 (4.5) Tamain, A. L. G., 79-771 (23) Tamhane, A. S., 79-2651 Tammenmaa, J., 79-2171 Tan, K. H., 79-1083, 3293 Tan, L.-P., 79-4029, 4266 Tanabe, S., 79-2893 Tanaka, K., 79-1132 Tanelli, G., 79-2877, 3515 Tanida, K., 79-4083 Tarasevich, S. I., 79-2908 Tarasevich, Yu. I., 79-3383 Tarasov, L. S., 79-3934, 3935 Tarasyuk, L. P., 79-2762 Tarasyuk, O. N., 79-2762 Tarkhov, Yu. A., 79-1427 Tarling, D. H., 79-3080 Tarney, J., 79-1444, 2492, 2974. 3231 (8), 3821, 3838 Tarte, P., 79-3697

Tarzi, J. G., 79-2071, 3314 Tate, K. R., 79-2023 Tatekawa, M., 79-2803, 2824 Tatsumi, T., 79-2859 Tatsumoto, M., 79-1506, 1535, 2705 Taube, A., 79-502 Tauson, L. V., 79-1070 (III.14) Taylor, A. P., 79-2158 (33) Taylor, B. E., 79-343, 2501 Taylor, D., 79-1119, 2422, 4349, 4350 Taylor, G. C., 79-1240 Taylor, G. J., 79-1494, 1521, 1558, 2686, 2689, 2700, 3928, 3983, 3985 Taylor, L. A., 79-515, 1501, 1502, 1554, 2684, 2685, 2691, 2695, 3954, 4235 Taylor, M., 79-2117, 3354 Taylor, P. N., 79-9 Taylor, R. B., 79-4384 Taylor, R. G., 79-1070 (I.5), 1218 Taylor, R. M., 79-3258 Taylor, S., 79-1198 Taylor, S. R., 79-541, 583, 3868 Tazaki, K., 79-2014 (4.9), 2072, 2791 Tazawa, Y., 79-4000 Tazieff, H., 79-2957 Tazzoli, V., 79-186 Tchoubar, C., 79-2014 (1.4) Teichmuller, M., 79-1836 Teixeira, W., 79-1687 Tejedor-Tejedor, M. I., 79-2014 (6.2)Teleguin, V. P., 79-2238 Telfer, D. J., 79-162 Tella, S., 79-3051 Tempelman-Kluit, D. J., 79-505 Tempier, C., 79-771 (22) Templeman, J. A., 79-4078 Tenginkai, S. G., 79-1178 Tennyson, J., 79-2572 Teplinskiy, G. I., 79-2593 Terashima, S., 79-1070 (III.7), 4201, 4285 Terauchi, H., 79-181 Terekhova, V. M., 79-1622 Terrell, D. J., 79-2615 Tersigni, C., 79-3651 Terzić, M., 79-69 (14) Tettenhorst, R., 79-123 Tewari, B. S., 79-3249 Textoris, D. A., 79-1811 Thacker, R., 79-621, 1531 Thaib, J., 79-4151 't Hart, J., 79-2092 Than Thong Hue, 79-378 Thaulow, N., 79-271 Theis, N. J., 79-1060 (D.3) Theodore, T. G., 79-3526 Thibiéroz, J., 79-3533 Thiemann, K. H., 79-3393 Thiry, M., 79-3478 Thode, H. G., 79-3851 Thomas, G., 79-1975 Thomas, G. E., 79-71 (9) Thomas, I. L., 79-1052 Thomas, J. H., 79-3254 Thomas, M., 79-3857 Thomas, M. D., 79-2944 Thomas, M. W., 79-1128, 1129

Thomas, R. K., 79-2014 (2.2), 3266 Thomas, W. M., 79-244 Thomaz, M. F., 79-948 Thompson, A. B., 79-1058, 3233 (I.2)Thompson, B., 79-500 Thompson, C. L., 79-1520 Thompson, G., 79-2013 (1.6), Thompson, J. B., Jr., 79-1610, 3745 Thompson, J. M., 79-3886 Thompson, P. H., 79-2910 Thompson, R., 79-1942 Thompson, R. C., 79-2082 Thompson, R. I., 79-1223 Thompson, R. N., 79-297, 298, 444, 666, 1770, 1973, 2294, 2295 Thomson, M. E., 79-790 Thon, A., 79-771 (7), 782, Thorez, J., 79-2014 (3.9) Thornber, M. R., 79-2352 Thornton, G., 79-184 Thornton, I., 79-3544 Thorpe, D. G., 79-70 (8) Thorpe, R. S., 79-2478, 2503, 3126, 3154, 3837 Thorsteinsson, R., 79-1584 Thorup, N., 79-3349 (36) Threlkeld, C. N., 79-2464 Tiba, T., 79-734, 930, 2796, 2808, 4038, 4063 1605, Tien, P.-L., 79-4029 Tien, T. Y., 79-311, 1328 Tiffney, B., 79-805 (7) Tillander, H., 79-1347 Tilley, C. E., 79-2294, 2295 Tillmanns, E., 79-764 Tilsey, J. E., 79-1060 (C.5) Tilton, G. R., 79-1496 Timčák, G., 79-3194, 4007 Timofeeva, T. S., 79-4065 Timoshkova, L. P., 79-364 Ting, F. T. C., 79-43 Tippelskirch, H. von, 79-2270 Tischendorf, G., 79-681, 1070, 1070 (I.2, II.6, III.10) Tissot, B., 79-2587 Tisue, G. T., 79-39, 3252 Tittmann, B. R., 79-596 Tixeront, M., 79-3434, 4360 Tjandra, J., 79-3700 Tjokosapoetro, S., 79-4153 Tkachev, A. M., 79-3349 (51) Todt, W., 79-1496 Toibaeva, V. Yu., 79-742 Tokonami, M., 79-667 Toksöz, M. N., 79-542, 544 Tolksdorf, W., 79-1066 (1) Tolomeo, L., 79-2514 Toma, S. A., 79-2831 Toman, K., 79-193, 3427 Tomandl, D. A., 79-636 Tomblin, J. F., 79-3231 (21) Tombrello, T. A., 79-2452, 2723, 3960 Tomich, S. A., 79-1183 Tomilov, S. B., 79-148 Tomisaka, T., 79-1614, 2818 Tomita, K., 79-98, 116, 2028, 2060

Tomschey, O., 79-3845 Tomson, M. B., 79-253 Toraya, H., 79-2112 Torii, T., 79-2525 Toriumi, K., 79-3398 Toriumi, M., 79-3067 Tornheim, L., 79-1473, 1474 Törnroos, R., 79-2810 Toro, B., 79-958 Torres Sanchez, R. M., 79-2047 Torske, T., 79-912 Tossell, J. A., 79-3390, 3395 Toulmin, P. III, 79-1564, 1565 Touray, J.-C., 79-3529, 3531, 3785 Tournemire, R., 79-2861 Tournon, J., 79-1743 Tournoux, M., 79-1133 Toverud, Ö., 79-3892 Townley, K. A., 79-1908 Townley, R., 79-2172 Tozer, E. T., 79-771 Tözér, J., 79-3157 Tözsér, J., 79-4068 Tracy, R. J., 79-1854, 2785 Traczyk, S., 79-2073 Trancu, T. C., 79-1046 Tran Qui, D., 79-3349 (38) Trask, N. J., 79-613 Travesi, A., 79-3228 Traynor, M. F., 79-2041 Trefry, J. H., 79-1262 Treivus, E. B., 79-256 Trembath, L. T., 79-694, 2323, 3385 Tremblay, L. P., 79-1060 (E.3) Tremblay, R. F., 79-2821 Trendall, A. F., 79-1014 Trépied, L., 79-3602 Trettin, H. P., 79-4403 Treuil, M., 79-2974 Treves, S. B., 79-860 Triboulet, C., 79-2798 Trichet, J., 79-703 Tricker, M. J., 79-2098 Trigila, R., 79-69 (4), 1752, 3651, 3715, 3728 Trimble, L. M., 79-3501 Triodina, N. S., 79-3349 (57) Tripp, S. E., 79-1027 Trochim, H. D., 79-3230 Tröeng, B., 79-1678 Trofimenko, V. V., 79-263 Troll, G., 79-2636 Trombka, J. I., 79-573, 2665 Trombrello, T. A., 79-3962, 3963 Trommsdorff, V., 79-670, 921, Troneva, N. V., 79-2857 Trucano, P., 79-1122 Truckle, P. H., 79-4222 Truebe, H. A., 79-3113 Trumm, A., 79-2339, 2340 Trusell, F. C., 79-47 Tsusue, A., 79-1070 (III.15) Trzcienski, W. E., *Jr.*, 79-2759 Tsai, C.-L., 79-4037, 4198 Tsai, H.-M., 79-718, 3233 (II.5, III.7) Tschapek, M., 79-2047 Tschernich, R. W., 79-4062 Tsekhovol'skaya, D. I., 79-327 Tsepin, A. L., 79-743 't Serstevens, A., 79-2031

Tseytlin, S. G., 79-2485 Tso, J. L., 79-3739 Tsong, I. S. T., 79-2, 704, 713 Tsuboi, S., 79-77 Tsui, P.-C., 79-4029 Tsutsumi, M., 79-293 Tsutsumi, S., 79-2893 Tsuzuki, Y., 79-77 Tuck, J. J., 79-2014 (2.3) Tugsavul, A., 79-3897 Tull, J. F., 79-777 Tullis, J., 79-3599 Tully, J. V., 79-1222 Turcotte, D. L., 79-530, 1879, 1921 Turek, A., 79-1023, 2643 Turekian, K. K., 79-1258, 3855 Turi, B., 79-475 Turnau-Morawska, M., 79-4263 Turner, D. C., 79-2925 Turner, G., 79-3144 Turner, K., 79-1632 Turner, P., 79-1171, 2991, 3080 Turner, S., 79-3396 Turovtsev, D. M., 79-2238 Tveten, E., 79-9 Tweto, O., 79-3503 Twichell, D. C., 79-1808 Twigt, W., 79-3131 Twiss, R. J., 79-372

Uebel, P.-J., 79-699 Ueda, S., 79-3753 Uematsu, K., 79-3674 Uhlmann, D. R., 79-1501, 1525, 1551, 2695, 2696, 2744 Ulff-Møller, F., 79-813 Ulmer, G., 79-175 Ullrich, G. W., 79-3938 Ulrich, J., 79-3189 Umpleby, D. C., 79-119 Ünal, H., 79-2269 Underwood, J. H., 79-45 Underwood, J. R., Jr., 79-605 Ungaretti, L., 79-3384 Unger, E., 79-410, 1042 Unruh, D. M., 79-1506, 2705 Upadhyay, H. D., 79-2985, 4236 Upton, B. G. J., 79-25 Urabe, T., 79-2859 Urban, J., 79-974 Ure, A. M., 79-1248, 3324 Usdowski, E., 79-2578 Ushatinskiy, I. N., 79-2816 Ushio, M., 79-3761 Uspenskiy, V. A., 79-1384 Utochkina, G. I., 79-662 Utter, T., 79-1624, 4262 Uytterhoeven, J. B., 79-2042, 2045 Uzuakpunwa, A. B., 79-3054

Vacca, A., 79-128
Vacher, A., 79-1885
Vail, J. R., 79-2926
Valarelli, J. V., 79-1226
Valcha, Z., 79-2640
Valdiya, K. S., 79-3248 (1)
Valencio, D. A., 79-35
Valenzuela-Calahorro, C., 79-2050
Valiyev, Yu. Ya., 79-1426
Valladas, G., 79-3155
Valley, J. W., 79-1375

Vallier, T. L., 79-1855 Vallières, A., 79-1679 van Biljon, W. J., 79-2901 (1, 16) Van Bladel, R., 79-3292 van Breeman, O., 79-1056 (2.2), 3150-3152, 3784 Van Calsteren, P. W. C., 79-Van Damme, H., 79-2014 (2.12) van de Graaff, W. J. E., 79-1669 van de Kraats, A. H., 79-1837 van der Gaast, S. J., 79-2022 van der Rijst, H., 79-1837 van der Wegen, G., 79-920 Vandiver, B. B., 79-1684 van Diver, B. B., 79-2923 Van Goethem, L., 79-1124 Vaniman, D. T., 79-1495, 1563, 1607, 2653, 2654, 2690, 2694, 2699, 3926, 3927 Van Kooten, G. K., 79-1585 Van Landuyt, J., 79-1124 Van Langeveld, A. D., 79-2022 van Lamoen, H., 79-3024 Vann, I. R., 79-1056 (4.7) van Niekirk, C. B., 79-2158 (7) Vannucci, S., 79-4260 Van Oosterwych-Gastuche, M. C., 79-3262, 3263 Van Parys, B., 79-3438 van Reenen, D. D., 79-2158 (10), 2901 (7, 9) Vansant, E. F., 79-2040 Vanscoyoc, G. E., 79-2014 (2.10), 3297 Van Tassel, R., 79-3088 Van Uitert, L. G., 79-951 Van Vleet, E. S., 79-3864 van Vuuren, C. J. J., 79-2158 (4) Van Wambecke, L., 79-1650 van Zyl, D., 79-2158 (19) Vaquer, R., 79-3905 Varadarajan, S., 79-3249 (19) Varekamp, J. C., 79-3085 Varet, J., 79-2974 Varju, E. M., 79-2014 (4.2) Varlamoff, N., 79-1070 (II.7) Varnavas, S. P., 79-1756 Varne, R., 79-871 Vartanian, R., 79-3149 Vasilyev, E. K., 79-3349 (74) Vass, D., 79-3145, 3157 Vasudev, V. N., 79-4316 Yattasso, M., 79-247 Vaughan, D. J., 79-1171, 3056, 3080, 3395, 4094 Vaughan, M. T., 79-942 Vaugnat, M., 79-1414 Veblen, D. R., 79-1098, 1658, 2107 Veeeder, G. J., 79-579 Vegas, A., 79-198 Veis, M. E., 79-385 Veizer, J., 79-1417, 1430 Vekris, J. E., 79-3410 Velde, B., 79-102, 110, 156, 283, 2014, (4.7, 4.8), 2061, 2110, 2801, 3304 Velde, D., 79-656, 1731, 3750 Velinov, I., 79-307 Veneau, G., 79-2014 (4.6) Venkatachalam, S., 79-2156 Venkatesan, T. R., 79-566

Vennum, W. R., 79-4010

Venter, J. P., 79-2158 (20) Venturelli, G., 79-1415, 2478, 4020, 4239, 4309 Venugopal, J. S., 79-3300 Verdurmen, E. A., Th., 79-1948 Verma, P. K., 79-2774 Verma, V. K., 79-3248 (12), 3249 (15) Vernardakis, T., 79-249 Vernet, M., 79-2616 Verschure, R. H., 79-1033, 1948 Vershkovskaya, O. V., 79-2467 Verwoerd, W. J., 79-2158, 3620 Veselovskiy, N. V., 79-2466 Veselský, J., 79-4187 Vesselinov, I., 79-3349 (59) Vest, R. W., 79-950 Vezzalini, G., 79-707, 3352 Vezzoli, G. C., 79-314, 2290 Vgenopoulos, A., 79-2007 (2) v. Hodenberg, R., 79-2862 Vialsov, L. B., 79-3517 Victor, A. H., 79-1999 Vidal, F. V., 79-1393 Vidal, J.-L., 79-4049 Vidal, J. P., 79-178 Vidal, P., 79-2494, 3825 Vidal, V. M. V., 79-1393 Vidal-Valat, G., 79-178 Viegas, L. F. S., 79-3512 Viertel, H. U., 79-3061 Vigers, R. B. W., 79-4097 Vilas, F., 79-2664 Vilas, J. F., 79-35 Vilca, G., 79-3349 (73) Vilca, J., 79-3349 (73) Vilcsek, E., 79-1531 Vilemant, J. L., 79-2000 Viljoen, M. J., 79-2158 (4) Villalba, R. E., 79-1993 Villumsen, A., 79-1095 Vilminot, J.-C., 79-4243 Vincent, M. G., 79-3399 Vincent, W. E. J., 79-2052 Vinogradov, A. P., 79-2259 Violante, A., 79-2014 (6.4) Violante, P., 79-1086 Virdi, N. S., 79-3248 (6) Virgo, D., 79-144, 149, 152, 155, 175, 510, 516, 627, 665, 3611, 3615-3617, 3632, 3669 Virk, H. S., 79-3166 Visser, V., 79-3690 Viswanathan, K., 79-679 Vitális, G., 79-4282 Vittori O., 79-604 Vogel, G. L., 79-3582 Vogel, T. A., 79-468 Vogt, J., 79-2198 Vogt, P. R., 79-4234 Voigt, R., 79-4343 Vokes, F. M., 79-787 (7, 11), 3232 (1) Volf, M. B., 79-265, 266 Volfinger, M., 79-2391, 2393 Völgyi, L., 79-4392 Volk, B. G., 79-3260 Volkov, V. P., 79-3974 Vollset, J., 79-2014 (3.5) Voloshin, A. V., 79-662 von Bitter, P. H., 79-1044 Von Dreele, R. B., 79-176 Von Essen, J. C., 79-3177 von Gunten, H. R., 79-3968

Von Heimendahl, M., 79-426
Von Herzen, R. P., 79-3077
von Raumer, J., 79-1226
von Reichenbach, H., Graf., 79-2014 (2.8)
Von Stengel, M. O., 79-1116
Vörös, I., 79-2007, (10)
Voshage, H., 79-633
Voytov, G. I., 79-2593
Vrána, S., 79-2780
Vuceta, J., 79-2596
Vurro, F., 79-2877
Vyalsov, L. N., 79-2857
Vykhirstyuk, L. A., 79-2562

Waboso, C. E., 79-1874, 3174 Wachsen, G., 79-1353 Wacrenier, P. H., 79-2163 Wada, H., 79-1388 Wada, K., 79-80, 2014 (6.6) Waddington, E. D., 79-4003 Wadge, A. J., 79-1943 Wadge, G., 79-1753 Wadsworth, W. J., 79-826 Waff, H. S., 79-1876, 2319 Wagemann, R., 79-1425 Wagner, G. H., 79-2535 Wai, C. M., 79-2248 Wain-Hobson, T., 79-1942 Waits, G., 79-2672 Wakefield, J., 79-1207, 2901 (11) Wakhaloo, S. N., 79-3249 (17) Wakita, H., 79-413 Walawender, S. J., 79-2538 Walenta, K., 79-1647 Waleńczak, Z., 79-2471 Walker, D., 79-1498, 1499. 1556, 1852, 2311, 2717 Walker, G., 79-162 Walker, G. P. L., 79-1748 Walker, G. T., 79-1909 Walker, J., 79-789 (3) Walker, R. G., 79-996 Walker, R. L., 79-3836 Walker, R. M., 79-3966 Walker, R. N., 79-231 Walker, W. I., 79-1716 Wall, G. J., 79-52 Wallace, P. J., 79-800 Wallis, R. H., 79-1483 Walsh, J. N., 79-452, 1419, 1990, 3167, 3806 Walsh, P. J., 79-2290 Waltersson, K., 79-1101 Walton, A., 79-1072 Walton, A. W., 79-2508 Wan, C., 79-202, 1107, 1130, 3349 (47), 3418 Wang, H. F., 79-1866 Wang, M. K., 79-3290 Wang, N., 79-191, 2353 Wang, S., 79-38, 1972, 3142 Wang, T. S. C., 79-3290 Wang, X., 79-2358 Wang, Y., 79-3075, 4354 Wänke, H., 79-535, 539, 1531, 3233 (V.3), 3908 Wanless, R. K., 79-3170, 3173 Waples, D. W., 79-1473, 1474 Warasteh, M., 79-192

Ward, C. R., 79-1801

Ward, G. K., 79-862 Wardlaw, N., 79-1636

Warin, O. N., 79-1184

Wark, D. A., 79-635, 1513 Warne, S. St. J., 79-1638, 4103 Warner, J. L., 79-1516, 1524, 1544, 1557, 2681, 2741, 2743 Warner, R. D., 79-1494, 1521, 1558, 2648, 2686, 2689, 2700, 3928 Warren, L. J., 79-3849 Warren, P. H., 79-1532, 1533 Waslenchuk, D. G., 79-1245, Wass, S. Y., 79-3233 (V.1) Wasserburg, G. J., 79-20, 1408, 1442, 1505, 2704, 2713, 3804, 3921, 3949 Wasson, J. T., 79-623, 625, 1532, 1533, 1575 Watanabe, A., 79-2124, 2127 Watanabe, J., 79-316, 719 Watanabe, K., 79-316 Watanabe, T., 79-2111 Watkeys, M. K., 79-2901 (5) Watkins, J. A., 79-588 Watkins, N. D., 79-1747, 1748, 1940 Watkinson, D. H., 79-1200 Watkinson, J. H., 79-2262 Watson, A. E., 79-3218, 3221 Watson, E. B., 79-3618 Watson, J., 79-771 (12) Watson, J. V., 79-218 Watt, J. J., 79-3324 Watts, A. B., 79-1928 Watts, C. D., 79-1441 Watts, J., 79-2881 Watts, N. L., 79-1787 Watts, S. H., 79-1803 Waychunas, G. A., 79-244 Weatherhead, A. V., 79-2077 Weaver, B., 79-3231 (8) Weaver, C. E., 79-121 Weaver, R. M., 79-3253 Weaver, S. D., 79-2492 Webb, A. W., 79-1957, 1958 Webb, B. C., 79-3232 (6) Webber, M. D., 79-3287 Weber, H.-J., 79-2148 Weber, H. W., 79-3908 Weber, J., 79-3109 Weber, K., 79-192 Webers, G. F., 79-798 Wedepohl, K. H., 79-1395, 2017, 4140 Weed, S. B., 79-3320, 3321 Weeks, R. A., 79-322 Wegmüller, F., 79-3968 Wegner, M. W., 79-3066 Wei, J., 79-2212 Wei, W., 79-1210 Weibel, M., 79-1893, 4232 Weiblen, P., 79-1552 Weiblen, P. W., 79-1509, 1510, 1555, 1560, 2697 Weidner, D. J., 79-942, 4345 Weidner, J. R., 79-575 Weill, D. F., 79-1283, 1538 Weiner, B., 79-3862 Weinert, C. H. S. W., 79-1999 Weinke, H. H., 79-1402 Weir, A. H., 79-1059 (2) Weir, A. H., 79-2014 (4.7) Weisbrod, A., 79-278, 346, 348 Weiss, A., 79-75 Weiss, H., 79-563, 592

Weiss, J., 79-1328 Weiss, L. E., 79-783 Weiss, Z., 79-3349 (6) Weissberg, B. G., 79-2573 Weissel, J. K., 79-1918 Welhan, J. A., 79-2570 Welin, E., 79-3148 Weller, M. R., 79-2723 Wells, R. A., 79-4164 Wells, R. G., 79-981 Welz, F., 79-1066 (1) Wen, Y., 79-2306 Wendlandt, R. F., 79-3638, 3643, 3644 Weninger, H., 79-966, 1897 Wenk, E., 79-1615 Wenk, H. R., 79-1824, 3349 (42), 3389, 4104 Wenk, H.-R., 79-141 Wenner, D. B., 79 3867 Wensink, H., 79-3085 Wentworth, S., 79-2686 Werding, G., 79-1336 Werneke, C., 79-3357 Wernick, E., 79-4327 West, A. R., 79-345 Westgate, J. A., 79-1767 Westlake, D. W. S., 79-2580 Weston, R. M., 79-308 Wetherill, G. W., 79-71, 526, 2709, 3236 Wevers, J., 79-657 Wey, R., 79-95. 96, 2014 (6.3) Wheatley, C. J. V., 79-2158 (13, 35) Wheeler, W. H., 79-1811 Whetherill, G. W., 79-619 Whipple, F. L., 79-71 (1) Whitaker, A., 79-3423 White, A. F., 79-333 White, A. J. R., 79-1725, 1726 White, C. W., 79-704 White, D. E., 79-864, 2995, 4227 White, G. W., 79-3139 White, J., 79-3741, 3742 White, J. L., 79-2014 (2.9), 2801, 3291 White, J. W., 79-2014 (2.2), 3266 White, K. L., 79-4275 White, R. S., 79-3133 White, R. W., 79-1088 White, S., 79-954, 8595 White, S. H., 79-3048, 3595 White, W. A., 79-240 White, W. B., 79-2 White, W. M., 79-2475 Whitebread, D. H., 79-3832 Whitehead, R. E. S., 79-1412, 3829 Whitehead, S. G., 79-1958 Whitehouse, K. I., 79-1171 Whiteside, P. J., 79-1991 Whitford, D. J., 79-459-461, 466, 470, 1413, 2490 Whitford-Stark, J. L., 79-3977 Whitney, J. A., 79-873 Whittaker, A. G., 79-312 Whittaker, E. J. W., 79-3349 (52), 3373, 4040, 4041 Whyte, F., 79-4251 Wicander, E. R., 79-760 Wichroski, Z., 79-1089 Wickham, C. S., 79-2020 Wicks, F. J., 79-4040, 4041

Widmer, G., 79-2513 Wiebe, R. A., 79-1732 Wieczorek-Ciurowa, 2355, 4101 Wiedenfield, R. P., 79-3278 Wiegmann, J., 79-3349 (75) Wielens, J. B. W., 79-3147 Wieler, R., 79-3955 Wierzcholowski, B., 79-1708 Wiesmann, H., 79-1492, 2703 Wiewiora, A., 79-2814 Wigley, T. M. L., 79-2590 Wilband, J. T., 79-468 Wilburn, D. R., 79-264, 1862, 3060 Wild, A., 79-1080 Wildey, R. L., 79-2665 Wilding, L. P., 79-3319 Wildman, J. E., 79-2352 Wildung, R. E., 79-3308 Wilhelms, D. E., 79-592 Wilke, A., 79-4140 Wilke, H.-J., 79-3098, 4374 Wilkening, L. L., 79-644 Wilkins, C., 79-2254 Wilkinson, B. H., 79-3011, 3013 Wilkinson, F. C. F., 79-3222 Wilkinson, J. F. G., 79-1728 Wilks, E. M., 79-3759 Will, G., 79-3660, 3685, 4343 Willgallis, A., 79-2834 William, H., 79-4406 Willaime, C., 79-3604 Williams, C. A., 79-3137 Williams, C. E., 79-3232 (7) Williams, C. T., 79-2919 Williams, D. B., 79-3234 Williams, H., 79-1056 (1.1) Williams, I. S., 79-1725 Williams, J. D., 79-1362 Williams, J. G., 79-619, 2491 Williams, J. M., 79-3355 Williams, K. L., 79-933, 3793 Williams, S. A., 79-1651, 2889 Williams, S. J., 79-1012 Willis, B. T. M., 79-1128 Willis, J., 79-623, 625, 1575 Wilshire, H. G., 79-3233 (II.10) Wilson, A., 79-2624 Wilson, A. F., 79-658 Wilson, A. J. C., 79-211, 212 Wilson, A. T., 79-2450 Wilson, C. J. L., 79-3048, 4141 Wilson, F. H., 79-2606 Wilson, G., 79-2298 Wilson, H. E., 79-1703, 2898 Wilson, I. H., 79-1671 Wilson, J. F., 79-3159 Wilson, J. R., 79-786 Wilson, L., 79-1746, 1747 Wilson, M. J., 79-79, 1085, 2055 Wilson, P., 79-2994 Wilson, R. C. L., 79-3137 Wilson, S. J., 79-2346 Wilson, W. E., 79-1988, 2822, 2865, 3118, 3119 Wilson, W. F., 79-1742, 1901 Wimmernauer, W., 79-963 Winchester, J. A., 79-3029, 3030 Windom, H., 79-3552 Windom, K. E., 79-3233 (II.10) Windsor, J. G. Jr., 79-2547 Wingfield, R. T. R., 79-4254 Winikka, C. C., 79-70 (9)

Winkler, H. G. F., 79-2321, 4140, 4290 Wintenberger, M., 79-3349 (69) Winter, G. A., 79-2795 Winter, J. K., 79-3388 Wintle, A. G., 79-1936 Wintsch, R. P., 79-3049 Winzer, S. R., 79-1519, 1529 Wirsching, U., 79-2418 Wirtz, G. P., 79-325 Wise, S. W., *Jr.*, 79-36 Wise, W. S., 79-1653, 2829, 4062 Wiskerchen, M. J., 79-547, 551 Witczak, S., 79-4090 Wittke, O., 79-1130 Włodowski, A., 79-4352 Włosiński, W., 79-3663 Wodzicki, A., 79-1616 Woermann, E., 79-1528 Wohletz, K. H., 79-70 (13) Wolanin, H., 79-64 Wolf, R., 79-1382 Wolfe, C. W., 79-2833 Wolfe, R. W., 79-575, 2663 Wolfe, S. A., 79-3937 Wollast, R., 79-3876 Wollin, G., 79-3128 Wondratschek, H., 79-2008 Wones, D. P., 79-1340 Wong, H. K. T., 79-2245 Wong, W. W., 79-2544 Wood, B. J., 79-259, 1267, 2299, 3585, 3708, 3716–3719 Wood, C. A., 79-3939, 3945 Wood, C. P., 79-1762 Wood, D. A., 79-447, 1770, 2974 Wood, D. R., 79-1987 Wood, G. C., 79-2674, 3919 Wood, J. A., 79-557 Wood, R. M., 79-2800, 3022 Woodcock, M. R., 79-2680, 3909 Woodcock, N. H., 79-4146 Wooden, J., 79-2703 Wooden, J. L., 79-1492 Woodriff, R., 79-3255 Woods, G. A., 79-1779 Woodsworth, G. J., 79-2757 Woolley, A. R., 79-4023 Worner, H. K., 79-1847 Worssam, B. C., 79-1792 Wren, A. E., 79-789 (1,2) Wright, J. B., 79-3126 Wright, T. L., 79-4226 Wroge, M. L., 79-3920 Wu, M. H., 79-3290 Wuensch, B. J., 79-3408 Wyatt, B., 79-3233 (III.5), 3726 Wyllie, P. J., 79-1308, 2284, 2359, 3675, 3688 Wynne-Edwards, H. R., 79-2158 Wyrwicki, R., 79-2084, 2085 Wyszomirski, P., 79-3670 Wyttenbach, A., 79-3968 Xia, K., 79-649 Xiao, Q., 79-1800

Ximen, L., 79-1645

Xu, D., 79-2461 Xu, S., 79-4320

Yablokova, S. V., 79-2152 Yabuki, H., 79-631 Yadav, S., 79-3283 Yagi, K., 79-185, 1134, 1135, 2794, 3733, 4172 Yagi, T., 79-350, 3684, 3712, 3713 Yajima, S., 79-270 Yajima, T., 79-4202 Yakubovich, O. V., 79-2128, 2143, 2145 Yamaguchi, M., 79-2523 Yamakoshi, K., 79-2526, 4000 Yamaliyev, K. M., 79-2462 Yamamoto, H., 79-904 Yamamoto, K., 79-142 Yamamoto, M., 79-370, 697, Yaman, S., 79-3529 Yamana, K., 79-2135 Yamanaka, T., 79-3360 Yamasaki, M., 79-2379 Yamzin, I. I., 79-1120 Yan, Z., 79-458, 1715 Yanagi, T., 79-462 Yanagisawa, M., 79-3143 Yanagita, S., 79-4000 Yang, B., 79-2866 Yang, H.-Y., 79-4199 Yang, M., 79-2763 Yapp, C. J., 79-3789 Yardley, B. W. D., 79-1851 Yariv, S., 79-2018, 3272, 3273 Yaroshenko, S. K., 79-683 Yaroslavskii, R. I., 79-1380 Yarynych, O. A., 79-3791 Yarzab, R. F., 79-3858 Yatagai, K., 79-706 Ye, D., 79-3822 Yeh, D., 79-2768, 4330 Yellur, D. D., 79-1404 Yi, W., 79-649 Yildiz, M., 79-3479 Yiou, F., 79-3878 Yoder, H. S., Jr., 79-296, 303, 353, 373, 656, 3641, 3750 Yokoyama, K., 79-3045 York, D., 79-1941 Yoshii, M., 79-2805 Yoshikawa, K., 79-3732 Yoshinaga, N., 79-1086 Yoshino, F., 79-719 Youh, C. C., 79-4266, 4317 Young, B., 79-1231, 1791, 2053 Young, B. R., 79-393, 394 Young, D. R., 79-1264 Young, G. M., 79-3852, 3853 Young, K. P., 79-4216 Young, R. A., 79-211, 212, 3422, 3942 Youngs, B. C., 79-1804 Youssef, A. F., 79-2014 (1.1) Ypma, P. J. M., 79-655 Yu, K., 79-2093, 2094 Yu, R. M., 79-1365 Yu, S., 79-2095 Yu, X., 79-1649 Yuen, D. A., 79-1922 Yui, T.-F., 79-4029 Yund, R. A., 79-366, 3599 Yurkovich, S. P., 79-4289 Yusa, Y., 79-4245 Yushkin, N. P., 79-4109 Yusef, N. A., 79-2

Zabiński, W., 79-4043, 4095, 4352 Zachariasen, W. H., 79-3349 (79)Zachry, D. L., Jr., 79-2535 Zahedi, P., 79-2458 Zaitsev, V. N., 79-147, 2105 Zak, I., 79-3843 Zandt, G., 79-2966 Zang, R., 79-2763 Zanin, Yu. N., 79-2226 Zarka, A., 79-1300 Zartman, R. E., 79-805 (8), 1026 Zassenhaus, H., 79-2008 Zav'yalov, E. N., 79-4099, 4111 Zaw, U. K., 79-4032 Zaw, U. Khin., 79-18 Zayed, M. A., 79-2518 Zeck, H. P., 79-6 Zedler, A., 79-182, 3349 (24) Zefiro, L., 79-3563 Zehnder, K., 79-1034 Zeitler, G., 79-410 Zeitlin, H., 79-2168 Żelaźniewicz, A., 79-1665 Zelazny, L. W., 79-3260 Zeller, E. J., 79-1189 Zellner, B., 79-586, 587 Zemann, J., 79-188, 1147, 3397 Zemmels, I., 79-480 Zen, E-an., 79-1613, 2797 Zenger, D. H., 79-1806 Zerbi, M., 79-4196 Zettler, F., 79-2138 Zeuch, D. H., 79-3605 Zhang, N., 79-2358 Zhang, R., 79-2763, 3798 Zhang, W., 79-458, 1715, 3043, 3822, 4320 Zhang, Y., 79-1955 Zhao, D., 79-3142 Zhao, S., 79-1800 Zhdanov, S. P., 79-3349 (41) Zhe, A., 79-2768 Zheleznova, Ye [E]. I., 79-1054 Zheng, X., 79-458, 1715, 4154 Zhilinskii, G. B., 79-1070 (IV.11) Zhirova, L. T., 79-2226 Zhou, J., 79-1649 Zhou, W., 79-649 Zhou, X., 79-2212 Zhou, Y., 79-2938 Zhu, B., 79-648 Zhu, Y., 79-3004 Ziegler, A. M., 79-3236 (18) Zielinski, R. A., 79-1471 Ziemer, B., 79-153, 3349 (55) Zigan, F., 79-205, 3349 (64), Zijderveld, J. D. A., 79-3085 Zikmund, Z., 79-3349 (7) Zilberfarb, A., 79-1712 Zimine, S., 79-3825 Zimmerhackl, E., 79-410 Zimmermann, J.-L., 79-2396 Zimmerman, R. A., 79-69 (19) Zinner, E., 79-569, 3966 Zirki, E. J., 79-969 Zirpoli, G., 79-4315 Ziserman, A., 79-3529 Zisk, S., 79-2666, 2667 Zitzmann, A., 79-2019

Yvon, K., 79-194

Zlatovský, I., 79-261 Zlobin, V. A., 79-2193 Zlocha, J., 79-4080 Zonenshain, L. P., 79-868 Zong, P., 79-649 Zorina, M. L., 79-662

Zoubek, V., 79-1070 (I.6) Zoungrana, G., 79-3450 Zoungrana, G., 79-3450 Zschach, S., 79-2738 Zuffa, G. G., 79-794 Zumberge, J. E., 79-1386, 3461 Zurita-Herrera, L., 79-2050 Zussman, J., 79-2099, 2109, Zwahr, H., 79-1642 4041 Zvereva, L. A., 79-3040 Zvereva, S. D., 79-224 Zvyagin, B. B., 79-1112, 2014 (1.5)

Zwart, P. A., 79-3999 Zweifel, H., 79-221 Zydzik, G., 79-951 Żyla, M., 79-3289, 4352 Zyryanov, V. N., 79-1345

## SUBJECT INDEX

to Mineralogical Abstracts. vol. 30. Names of REGIONS are printed in capitals. Subjects in lower-case roman, and localities in italics.

Abelsonite, nickel porphyrin, Utah, new mineral, chem., X-ray, 79-1646

Abu Dhabi, v. United Arab Emirates

Acid rocks, lithophylic rare element concentration, 79-1070 (IV.7)

Acmite v. pyroxene

Actinides, adsorption by Mn and Fe oxides in soils and sediments, 79-2255

Actinium, extraction from seawater, 79-3880

Adamellite, New South Wales, geochem. and heat generation, 79-1724; Labrador, ages of zircons from 79-24; Maine, muscovite and K-feldspar from, 79-1604

Adamite-olivenite solid solutions, ordering in, 79-3427; crystal structure, 79-2138

Adularia v. feldspar

AEGEAN SEA, sedimentary basin development, 79-987; volcanism and seismicity, 79-69 (2); NW Aegean arc, inner arc volcanism, 79-4242; SE, volcanic rocks, 79-69 (15); Christiana Is., petrol, 79-69 (11); Santorini volcano, 79-69 (6); origin of calc-alkali magma series, 79-69 (11)

Aenigmatite, solid solution in, 79-674; Nigeria, 79-836; Ontario, in ferroaugite

syenite, 79-2789

Aeolian Is. v. Sicily, Italy

Aeschynite, Austria, chem., X-ray, 79-4087; Switzerland, aeschynite-Y., 79-4378

AFGHANISTAN, Nuristan, Darre Pech, tourmaline, 79-660; Laghman, gem pegmatites, 79-2438

AFRICA, emeralds, 79-386; manganese deposits, 79-3432; Na, K, P, Ti in garnet, pyroxene, olivine from kimberlitic peridotite and eclogite, 79-4005; granulites and related rocks, 79-3035; marine geophys. of continental shelf, 79-3435; E, isostatic compression, 79-1915; East African rift system anomaly, 79-3132; N, domally uplifted Cainozoic volcanic centres, 79-3132; S, Namaqua mobile belt, 79-2158 (11); Limpopo mobile belt seminar, 79-2901; inclusion-bearing diamonds and mantlederived xenoliths, 79-2472; uraniferous materials, 79-1480; SW, major charnockite-granulite province; SW African shelf and slope, sterenes in surface sediments, 79-2557; W, tectonic activity, 79-3126, 3127; Mauritanides, synthesis, 79-771 (25); Namibian shelf, geochem. of phosphorites, 79-436

Agate, origin and significance of inclusions, 79-402; *Poland*, 79-1360

Age determination, K-bearing sulphide minerals, 79-1; obsidian artifacts, 79-2; radiocarbon dating with electrostatic accelerators, 79-3, 4; isochron diagrams in <sup>40</sup>Ar/<sup>39</sup>Ar dating, 79-1001; mixed-layer in deep-sea carbonates, 79-1786; 3-D plots in K/Ar dating; 79-1934; detn. of U-Pb and U-Th-Pb isochron parameters, 79-1935; Quaternary calcite, 79-1936; <sup>14</sup>C dating,

comparison of beta and ion counting, 79-1937; geochron. framework of Limpopo mobile belt, 79-2901 (14); nuclear track method review, 79-3141;  ${}^{40}\text{Ar}/{}^{39}\text{Ar}$  systematics, temp., pressure effects, 79-3143, 3144; World Neogene radiometric time scale, 79-3145; fossil bones, 79-3146; Scandanavian impact structures, 79-1941; Norway, in Archaean and Proterozoic, 79-9; zircons from high-grade metamorphic Precambrian, 79-3147; rocks of Surnadal syncline, 79-10; Oslo palaeorift, 79-787 (4); Sweden, granite intrusions, 79-3148; Iceland, geomagnetic field reversals, 79-1940; Scotland, Loch Borrolan complex, 79-3150; Glen Dessary syenite, 79-3151; feldspars from Caledonian granites, 79-3152; Scotland and England, Palaeozoic granites, 79-1056 (3.6); Lake District, Stockdale rhyolite, 79-1943; Ordovician intrusions, 79-1004; Isle of Man, K/Ar ages from ore deposits, 79-3153; Wales, Precambrian rocks, 79-1944; South Wales, late Precambrian igneous rocks, 79-1005; Anglesey, metamorphism and magmatism in Mona complex, 79-3154; Ireland, pre-Caledonian rocks, 79-1945; France, lava flows with reverse palaeomagnetism, 79-3155; France and Spain, Variscan fold belt, 79-1947; North Pyrenean metamorphism, 79-11; Spain, Hercynian orogen, 79-1948; Germany, eclogites and country rock, 79-1949; Czechoslovakia, neovolcanic rocks, 79-3156; chronology of volcanic events, 79-3157; Sardinia, metamorphic basement, 79-1951; *Malawi*, hypersthene granites, 79-2927; *Zambia*, in Bangweulu block, 79-3158; in Mozambique belt, 79-3160; Rhodesia, Archaean event, 79-3159; South Africa, conglomerate boulders, 79-2158 (7); nodules in peridotites, 79-12; melilite basalts, 79-1009; Precambrian metavolcanic rocks, 79-3161; Copperton formation, 79-2158 (15); Namibia, pelitic sediments, 79-3162; Israel, Miocene-Pliocene basalts, 79-1007; Saudi Arabia, zircon method of isotopic dating 79-3164; gneissic rocks, 79-3163; Solomon Is., rocks from Small Nggela Is., 79-1960; India, radiocarbon <sup>14</sup>C dates, 79-3165; basic rock suites, 79-3249 (36); metabasites, 79-3249 (19); biotites from crystalline rocks, 79-1953; Singhbhum granite, 79-13; eastern Nepal, 79-3248; Thailand, granite magmatism, 79-3167; China, Precambrian metamorphic rocks, 79-1955; Himalayan movement, 79-1954; Japan, Ryoke belt, 79-2523; Bounty Is. area, granites and metasediments, 79-1010; New Britain, intrusive rocks, 79-1961; Australia, metamorphism and prehistory of granulites, 79-1956; New South Wales, dioritic-monzonitic intrusive complex, 79-1820; basic

inclusion from kimberlitic breccia pipe, 79-1016; Queensland, metamorphism in Proterozoic igneous rocks, 79-1015; South Australia, banded iron formations, 79-1958; flow from Beda Volcanics, 79-1957; Victoria, granitic rocks, 79-1017; Western Australia, folded greenstone-granitoid complex, 79-14; galenas, 79-15; tin-bearing pegmatite, 79-1011; syenitic rocks, 79-1013; shale from Hardey sandstone, 79-1802; Gascoyne Province and Yilgarn Block, 79-1012; Pilbara Block, 79-1014; Southern Ocean, piston cores, 79-36; Greenland, whole-rock isochron age of dyke, 79-6; post-tectonic intrusions, 79-7; in Caledonian fold belt, 79-8; dating igneous and metamorphic events, 79-1939; Greenland, Canada, dolerites, 79-25 Canada, 79-29; dykes from Frontenac axis, 79-1020; Canadian Shield, granitic rocks, 79-19; chronology of continental crust formation, 79-20; British Columbia, ages of Ecstall, Kitkiata, Quottoon plutons, 79-3175, 3176; Labrador, zircons from adamellites, 79-24; Archaean gneiss complex, U-Th-Pb ages, 79-3172; Uivak II gneisses, 79-3173; Manitoba, Thompson nickel belt, 79-1022, 1023; Manitoba and Saskatchewan, ore-leads, 79-21; Newfoundland, U/Pb ages of crystalline rocks, 79-26, 27; granite, 79-3169; hornblende and biotite from basement rocks, 79-1024; Roberts Arm group, 79-3170; Northwest Territories, intrusion and scheelite mineralization, 79-18; Aston dykes and Savage Point sills, 79-1021; Nova Scotia, slates, 79-28; North Mt. basalt, 79-3171; Ontario, dating Nipissing Great Lakes events, 79-1963; zircon and whole-rock ages compared, 79-22, 23; granitoid batholith, 79-1962; Umfraville gabbro, 79-3174; Quebec, Manicouagan melt sheet, 79-2745; Cainozoic volcanic suites, 79-17; USA, miscellaneous K/Ar measurements, 79-3177; biotites in tuffs from Eocene rocks, 79-3182; Appalachians, chronology of mountain building, 79-3178; U/Pb zircon dates, 79-1026; New England, White Mt. intrusives, 79-1965; Gulf of Alaska, ash layers, 79-1018; Alaska, basement rocks, 79-1019; Arizona, Cretaceous and Tertiary volcanic and intrusive rocks, 79-1028; California, uranium dating of marine deposits, 79-1967; plutonic rocks of Salinian Block, 79-33, 1029; potassic volcanism on Colorado plateau, 79-3185; NE Idaho batholith, Rb/Sr and U/Pb isotopic studies, 79-1027; Massachusetts, Dedham granodiorite, 79-1964; Nevada, igneous rocks from Edna Mt. quadrangle, 79-3183; New Mexico, zircon from crustal xenolith, 79-3184; New York, psammites and meta-psammites, 79-1025; South Dakota, Age determination (contd.)

weathered and stream-transported quartz, 79-1966; Wyoming, radiocarbon dates from carbonates of soils, 79-3181; Precambrian of Granite Mts., 79-3179; Preacher Creek ultramafic intrusion, 79-3180; Gulf of Mexico, Pliocene volcanic glass, 79-3186; Lesser Antilles, ophiolitic rocks, 79-34; central Andes, Upper Cainozoic volcanism, 79-1031; Argentina, Andacollo series, 79-35; Brazil, charnockites, 79-1969; Chile, Andean transect, 79-1030; crystalline rocks of Andean orogen, 79-1032

Agpaitic rocks, Labrador, aluminous and titaniferous clinopyroxenes, 79-4018

Agrellite, crystal structure, 79-3349 (47) Aikinite-bismuthinite series, comp. representation, 79-4096; Czechoslovakia, 79-4375 Akaganéite, sulphate adsorption, 79-274

Åkermanite v. melilite

Albite v. feldspar

Albrittonite, *Texas*, new mineral, chem., opt., X-ray, 79-761

Aldehyde, decomposition in soil by montmorillonite, 79-3317

Aleksite, USSR, new mineral, anal., opt., X-ray, 79-4111

Aleutian Is. v. Pacific Ocean

Algal mats, Abu Dhabi, biogeochem. study, 79-1441

ALGERIA, Grande Kabylie, sedimentary and tectonic evolution, 79-925; eastern Hoggar, late Pan-African intracontinental linear fold belt, 70-1667

Alkali halides, anharmonic contributions to Bragg diffraction, 79-215; Compton profiles, 79-3349 (21); morphological stability, 79-3349 (58)

-rich magmas, liquid immiscibility, 79-258 Alkaline earth oxide crystals, carbon content,

79-1313 complex, Portugal, petrol. and petrogen., 79-831

intrusion, Russian SFSR, contact metamorphism and metasomatism, 79-901

lavas, Mexico and Central America, 79-

rocks, crystallization of pyroxenes and amphiboles, 79-673; Ti deposits in, 79-1167; trace element distribution, 79-439; Turkey, 79-69 (16); USSR, magnetite from, 79-722; rock weathering, 79-2070; Egypt, petrochem., geochem., 79-2482; Canada, plutonic and hypabyssal rocks, 79-2943

Alkalinity of igneous rocks, petrochem. criteria, 79-809

Alkalis, magmatic trends in alkali-iron-mag-

nesium diagrams, 79-1692

Allanite, Norway, 79-823; India, fluorian-, anal., 79-2778; Canada, 79-233

Allargentum, France, 79-2856; Greenland, 79-4098

Allcharite, discrediting, 79-2843

Alleghanvite, France, 79-2270

Allophanes, structural formulae, 79-2014 (6.6) Alluaudite, nomenclature of group, 79-2876; crystal structure of synthetic variety  $Na_2(Fe_{0.3}^{3+}Fe_{0.5}^{2+})_2Fe^{2+}[PO_4]_3$ , 79-2145 Almandine v. garnet

Alnöite, Solomon Is., mineralogy of breccia, 79-847; discrete nodule suites from, 79-

3233 (V.5)

ALPS, minerals from, book, 79-4372; coexisting sodic and calcic amphiboles, 79-

2799; plagioclase from metamorphic rocks, 79-3389: mineralization in Brianzonese zone, 79-3474; counterparts in Himalayan and Alpine anatomy, 79-3248 (14); E, Pb-Zn deposits, 79-2183, 2184; W, zoned almandines, 79-652; v also Switzerland,

Alum, potash, growth defects in single crystals, 79-1300

Alumina, solubility in orthopyroxene, 79-2375; sulphate adsorption, 79-91; amorphous, retention of Cu<sup>2+</sup>, Ca<sup>2+</sup>, Mg<sup>2+</sup>, Mn2+, 79-92; mixed hydroxides, points of zero charge, 79-3286;  $\beta$ -, crystal structure, 79-174; development of processing in

Hungary, 79-2007 (20)

Aluminium, Athens International Congress, 79-2007; non-bauxite World resources, 79-2542; estimation in bauxite, 79-3211; dissolved in near-neutral waters, 79-1996; in interstitial waters of recent marine sediments, 79-3876; in soils, spectrophotometric and fluorometric detn., 79-3253; solubility in soils of humid tropics, 79-2083; kinetics of release from aluminosilicate minerals, 79-3259; influence on Fe oxide formation, 79-3258; high-purity, detn. of B in, 79-2003; partitioning between clino-pyroxene and spinel, 79-353; between pyroxenes, garnets, oxides, 79-354; structure and coordination in NaAlSi<sub>2</sub>O<sub>6</sub>, 79-3617; France, dissolved in hot springs, 79-2585

industry, system investigations, 79-2007

compounds, nature of hydrolytic precipitation products, 79-2014 (6.5); polycrystalline a-Al2O3, metasomatic sintering, 79-3663; pure and doped a-Al2O3, rapid sintering, 79-3664; aluminium hydroxide bauxite, 79-3291: crystallization in aluminium oxide monohydrates, DTA and DTG, 79-84; aluminium oxynitride spinels, structure model, 79-179; aluminium nitride, growth of single crystals, 79-2350; aluminium orthoborate, crystal structure, 79-198; aluminates, variation in bond 79-2089; tricalcium aluminate, formation kinetics, 79-3665; phases in SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub> system, 79-1334; aluminosilicate refractories, anal. of glassy phase, 79-3699; aluminosilicates, accumulation of uranium in, 79-2463; aqueous, reversible control, 79-2307; hydroxy aluminium phosphate-montmorillonite complex, 79-3287

Alunite, IR spectra, 79-945; aluminium resources, 79-3542; crystallization from dilute aluminium soln., 79-1082; behaviour of RE during formation, 79-307; Israel, Na-alunite in Jurassic flint clays, 79-1236; Japan, Al-rich, thermal studies, 79-751;

New Zealand, 79-1672

Amazonite v. feldspar

Amber, mythology, occurrence, etc., 79-3769; France, 79-1643; Poland, from Upper Cretaceous deposits, 79-4067

Amethyst v. quartz

Amino acids, in foraminiferal tests, 79-1416; in organic matter from carbonate and non-carbonate sediments, 79-2554; in marine sediments, stereochem., 79-2545; racemization dating of fossil bones, 79-3146; racemization reaction, geochem. applications, 79-1002; absorption of organic matter by calcite and quartz, 79-2555; adsorption on montmorillonite, 79-1075; China, geochem. in fossil bones, 79-2522

Ammonia, in Y-type molecular sieves, 79-380-382; reaction with vermiculite and hydrobiotite, 79-1080; Italy, distribution in thermal springs, 79-3884; Nigeria, fixation in soils, 79-109; Japan, in biotite, 79-4034

Ammonium compounds,  $(NH_4)_3H(SO_4)_2$ , crystal structure, 79-3414

Amorphous minerals, origin and identification, 79-2014 (6.9)

Amphiboles, nomenclature, I.M.A. report, 79-1600; clustering of cations, 79-3373; cation distribution and subsolidus phase relations, 79-675; amphibole-mica reaction, 79-2107; thermal treatment, 79-306; calcic amphiboles, Mössbauer spectra, 79-3372; crystallization in alkaline rocks, 79-673; stability in calc-alkaline magma chamber, 79-3736; fractionation model for calcalkaline magma formation, 79-806-808; coexisting sodic and calcic amphiboles from high P metamorphic belts, 79-2799; RE partitioning at upper mantle P and T, 79-2312; RE solubility, 79-285; 40Ar/39Ar response to tectonic events, 79-1950; trace elements and Sr-isotopes in, 79-1394; Norway, in high-grade metamorphic Precambrian, 79-676; Scotland, 79-4181; Cornwall, calcic, 79-1817; France, weathering to beidellite, 79-102; coexisting blue and blue-green pairs, 79-2798; Spain, 79-3472; in metabasites, 79-920; Austria, high-Al, from penninic rocks, 79-1601; Italy, 79-1833; Nigeria, 79-836; Lesotho, 79-3233 (II.4); New Zealand, 79-1730; Greenland, 79-818; Northwest Territories, F/OH ratios, 79-4032; Ontario, in ferroaugite syenite, 79-2789; Colorado, in peridotite, 79-3233 (IV.4); Minnesota, Ontario, 79-934; Brazil, manganoan, 79-1226

, actinolite, series with hornblende in metabasites, miscibility gap, 79-4028

-, anthophyllite, stability in presence of quartz, 79-3734; in system MgO-SiO<sub>2</sub>-H<sub>2</sub>O, 79-2397; Germany, from gneiss, opt., X-ray, 79-3033; Queensland, 79-1846

-, arfvedsonite, Newfoundland, in basalt dykes, 79-678

-, crossite, Portugal, anal., opt., 79-4031

-, cummingtonite, series with grunerite, Xray detn., 79-2768; Massachusetts, 79-3018

-, edenite, New York, 79-3107

, glaucophane, metamorphism and ophiolites, 79-2979; Greece, in blueschists and eclogites, 79-1838; Italy, from eclogites, 79-1834; Switzerland, in mafic rocks, 79-4305

-, grunerite, stability relations, 79-2390

---, holmquistite, Western Australia, 79-3101

-, hornblende, H isotope fractionation between aluminous hornblende and water, 79-3738; Shetland, from granodiorite, anal., opt., 79-825; Scotland, twinning on (101), 79-3070; Germany, 79-4374; Italy, 79-921; Russian SFSR, 79-902, 3042; in komatiites, 79-1696; India, in lenses in metasediments, 79-3039; Pakistan, acicular crystals in schists, chem., 79-926; Japan, 79-4319; from granitic rocks, chem., 79-686; megacrysts in andesite, anal. opt., 79-2796; New Zealand, 79-3047; Newfoundland, from basement rocks, age, 79Amphiboles, hornblende (contd.)

1024; Massachusetts, calcic, 79-2774; aluminous, chem., 79-2797; Montana, pargasitic, 79-4287; New York, chem., 79-2785; Oregon, in trondhjemite, 79-3231 (19); Texas, 79-1812; Virginia, 79-1741

—, kaersutite, in Chassigny meteorite, chem., 79-2728; France, 79-1885; Russian SFSR, 79-901; New South Wales, 79-3233 (V.1)

- —, nephrite, Poland, 79-1360; Taiwan, chem., opt., X-ray, 79-4029; New South Wales, nephrite deposit, 79-1847; South Australia, nephrite jade deposits, 79-1845; Wyoming, geol. of deposit, 79-4288
- , orthoamphiboles, high-low temp. transition, 79-355
- —, pargasite, Switzerland, alumino-ferroan, in eclogite, anal., opt., X-ray, 79-4030; Russian SFSR, 79-901, 902; New South Wales, 79-3233 (V.1)
- richterite, phase equilibria, 79-357; synthetic, phys. props., 79-677; series with ferrorichterite, pseudobinary join, 79-1339; magnesiorichterite, mechanism of formation, 79-358; synthetic Mg-Fe —, Mössbauer spectra, 79-155

-, tirodite, France, 79-2770

- —, tremolite, 79-429; thermal expansion, 79-1865; solid solution series with edenite, 79-3735; *Switzerland*, 79-3094; *Greece*, 79-1837; *Brazil*, tremolite-actinolite, 79-3120
- Amphibolites, petrogenetic grid, 79-4324; Scotland, Moine suites, 79-3025; Cornwall, hydrothermal mineralization, 79-1815; France, trondhjemitic layers in, 79-3231 (14); SW Africa, geochem. and origin, 79-2158 (28); India, petrol. and geochem., 79-3249 (21), 3871; Japan, chem. reactions at boundary with gneiss, 79-4286; Taiwan, exotic blocks, 79-4317; New Zealand, margarite in, 79-3047; Arizona, inclusions in latite, 79-3233 (IV.1)

Analcite v. zeolite

Anapaite, Germany, in oil shale, 79-3090

Anatase, Austria, 79-1897; Switzerland, 79-1893, 4376, 4378, 4379; Virginia, 79-1741

Andalusite, neutron diffraction study, 79-145; absorption spectra, 79-3380; phonon spectra and rigid-ion model calculation, 79-3357; elasticity and crystal structure, 79-942; enthalpy change of andalusite-sillimanite reaction, 79-1333; x-andalusite, transformation from pyrophyllite, 79-364; Aberdeenshire, andalusite/kyanite isograd, 79-4295

Andes v. Peru, Chile

Andesite, NAA of standard rock AGV-1, 79-3904; stability of amphiboles in, 79-2389; role of trace element partition coefficients in genesis models, 79-1277; calc-alkalic peraluminous andesite, origin, 79-296; crystallization intervals in basalt-andesite-H<sub>2</sub>O, 79-1308; *Mull*, pyroxenes from, 79-665; *Japan*, hydrothermal alteration, 79-116; containing hornblende megacrysts, anal., 79-2796; in *Mariana island arc*, origin, 79-2981; *Indonesia*, high-87Sr/86Sr, origin, 79-460; *Indonesia* and *Peru*, O and Sr isotopic studies, 79-461; *Aleutian Is.*, nature and source, 79-872; *South America*, calc-alkaline, trace element, Sr and Nd isotope data, 79-2503; *Peru*, 79-792

- magma, density and viscosity at high P, 79-3612
- melts, role of descending plates in formation, 79-3805
- Andosols, *Japan*, phys., chem. props., clay mineralogy, 79-2075

Andradite v. garnet

Anglesite, France, 79-1887; Switzerland, 79-1893; Japan, crystal structure, 79-1145

- ANGOLA, correlation between metamorphic rocks and ore deposits, 79-2905; volcanic belt compared with that in *Brazil*, 79-4410
- Anhydrite, crystal chem., 79-3341; thermal expansion, X-ray, 79-4337; New Zealand, 79-1672
- Aniline, adsorption in montmorillonite suspensions, 79-3292
- Ankerite, series with dolomite, opt. identification, 79-1971; IR evaluation of Fe contents and excess Ca, 79-1638; Japan, 79-2864; Colorado and Utah, 79-1810; Texas, subsurface cement in Eocene sandstones, 79-2536

Anode sludges, anal. by XRF, 79-52

Anorthite v. feldspar

Anorthosite, evaporites as precursors of massif anorthosite, 79-2566; Norway, structural, stratigraphic, petrol. study, 79-784; USSR, comp of gas inclusions, 79-2564; petrol. of anorthositation zones, 79-924; Indian Ocean, RE and Rb/Sr systematics, 79-3827; Labrador, associated plutons, 79-1732; New Zealand, margarite in, 79-3047

--- massifs, Ti deposits in, 79-1166; evaporite precursors, 79-1375; North America, 79-

853

ANTARCTICA, mineral resources and geopolitics, 79-3461; saline lakes, isotope ratios, chem. and evolution, 79-2525; East Scotia Sea, basalts from back-arc spreading centre, 79-3821; Ellsworth Mts. to Thiel Mts. ridge, geol., 79-798; Lambert Glacier, Precambrian metamorphic rocks, 79-1848; Lassiter Coast, plutonic garnets from Werner batholith, 79-4010; Marie Byrd Land, volcanology, 79-861; Mt. Augusta, Queen Alexandra Range, coal-forming elements in permineralized peat, 79-889; Pacific-Antarctic Ridge, sedimentary geochem. processes, 79-480; Pensacola Mts., Dufek intrusion, geol. studies, 79-849; Pensacola Mts. and Shackleton Range, geol. comparison, 79-797; Ross I., Mt. Morning, southern Victoria Land, geol. of volcanic rocks, 79-860; Ross Sea, Sr isotopic study of sediment, 79-481; dissolved organic carbon, 79-2553; South Shetland Is., Quaternary volcanics, 79-2492; Taylor Valley and McMurdo Sound, soil development, 79-124; Transantarctic Mts., petrogen. of Ferrar group rocks, 79-848; Victoria Land, resource and radioactivity survey, 79-1189

Antarcticite, crystal structure, 79-217

Anthophyllite v. amphibole

Antigorite, solubility in system MgO-SiO<sub>2</sub>-H<sub>2</sub>O, 79-2397

Antimony cpds.,  $\alpha$ -Sb<sub>2</sub>O<sub>4</sub>, neutron diffraction study, 79-184

deposits, France, 79-3508, 3511; Sardinia,
 tectonic relationship, 79-3516; USSR, Sb-Hg deposit, dispersed carbonaceous

material, 79-2467; South Africa, 79-1208, 2158 (4)

— sulphosalts, formation of, 79-1070 (IV.6) Antlerite, *Alabama*, 79-3117

76-4329; crystographically-controlled whisker growth, 79-3349 (56); biaxiality, 79-938; identification by staining, 79-1476; biotite-apatite geothermometer, 79-1341; structural interactions of F, Cl, OH in, 79-3422; lunar, 79-3972; calcium hydroxylapatite and vanadohydroxylapatite, behaviour in aqueous media, 79-2364; Sweden, from iron ores, fission track dating, 79-3149; Portugal, luminescence, 79-2868; Switzerland, 79-1893, 1894, 3095, 4376, 4378, 4379; Russian SFSR, 79-902; New South Wales, 79-3233 (V.1); New Zealand, 79-1672; Michigan, in sedimentary rocks, 79-3539; Virginia, 79-1741 , carbonate-apatite, structural model,

210; thermal stability, IR, X-ray, 79-1326—, chlorapatite, with fluid inclusions, synthesis, 79-3676; X-ray, 79-3677; hydro-

thermal synthesis, 79-3678

—, fluorapatite, phase equilibria, 79-1272; U and Th diffusion, 79-277; Cornwall, 79-1817

- —, hydroxyl-apatite, Turkey, 79-2811; Madagascar, inclusions in cordierite, 79-1593
- deposits, Russian SFSR, origin, 79-1272 — structure, crystal structures of cadmium

'apatites', 79-211, 212

Aplite, yield strength, 79-3599; Sweden, deformation under wet and dry conditions, 79-3600; Devonshire, types of mineral distribution, 79-3018; petrol. of envelope rocks, 79-899; Czechoslovakia, genesis in Ričany massif, 79-3019; Pakistan, Crmuscovite-bearing zoned complex, 79-903; California, dykes, stable isotope and fluid inclusion studies, 79-2501

Apogranite, zoned quartz phenocrysts in, 79-2827

Apophyllite, nomenclature revision, 79-2822; North Carolina, morphology of zoned crystals, 79-693

Aqueous dissolution data and relative mineral stabilities, 79-2267

- Aragonite, boron content, 79-3781; orthophosphate uptake from seawater, 79-2365; land snail shell, O and C isotopic measurements, 79-3789; *British Honduras*, transformation to calcite in marine gasteropod, 79-1636

Aramayoite, 79-331

Archaean, basin-craton complexes, critical appraisal, 79-996; volcanogenic ocean, 79-2446

ARCTIC OCEAN, catalogue of ocean bottom deposits, 79-3234

Arenites, Texas, storm-deposited, 79-4272

Arfvedsonite v. amphibole
ARGENTINA, Andacollo series, palaeomagnetism, K/Ar dating, 79-35; field excursions to Andes and Pampean Mts., 79-

2150; Cruz del Sur mine, surite, new mineral, 79-2893
Argentopentlandite v. pentlandite
Argillite, clay mineral content, 79-3300

Argon, in standard glauconite, 79-2646
— isotopes, isochron diagrams in 40Ar/39Ar

Argon, isotopes (contd.)

dating, 79-1001; T, P effects on 40Ar/39Ar systematics, 79-3143, 3144; studies of deep-sea igneous rocks, 79-1933; Ireland, in clay concentrates, 79-1946 Argyrodite, synthetic, X-ray, 79-191

Armalcolite, Greenland, 79-4069

Armstrongite, crystal structure, 79-3370 Arrojadite, nomenclature of group, 79-2876

Arsenic, spectrophotometric detn. in geochem. reference sample, 79-2616; concentrations in USA rivers, 79-2244; Lake Michigan, in unconsolidated sediments, 79-241; Alaska, in streams, sediments, ground water, 79-2606

- minerals, thermodynamics of formation in

sedimentary rocks, 79-329

Arsenopalladinite, Brazil and Montana, chem., X-ray, 79-2855

Arsenopyrite, 79-329

Arthurite, Nevada, crystal structure, 79-2139 Artinite, Germany, 79-3089; Turkey, 79-2811; Japan, hydrogen bonding, 79-203

Asbestiform minerals, definition and iden-

tification, 79-1243

Asbestos, Johannesburg, symposium proceedings, 79-1242; identification techniques, 79-1241; 3349 (76), anal. of fibres with electron microscope, 79-2253; identification of silicate minerals and asbestiform varieties, 79-2260; Vermont, asbestos-bearing ultramafic rocks, 79-3537

Ash, SE England, Lr. Eocene sequence, 79-2961; Gulf of Alaska, age, biostratigraphic, tectonic implications, 79-1018

ASIA, E, Sn-W-Mo metallogenic provinces,

79-1070 (I.3)

Asphaltenes, pyrolysis, 79-2586

Asphalts, Dead Sea, tetrapyrroles in, 79-2542 Asteroids, populations of planet-crossing asteroids, 79-615; albedo scale, 79-586, 587; surface materials, mineralogy and cosmological implications, 79-533; soil maturity, 79-579; small, light curve analysis, 79-534; Vesta as parent body of eucrites, 79-1574

Asthenosphere, porous flow model for magma migration, 79-1921

Atacamite, Austria, 79-3096

ATLANTIC OCEAN, catalogue of ocean bottom deposits, 79-3234; development of continental margin sedimentary basins, 79-3137; stratigraphy of continental shelf, 79-71 (12); weathering of sea-floor basalt, 79-3826; fluxes across seawater-sediment interface, 79-3877; atmospheric flux and trace metal chem, of oceanic suspended matter, 79-3879; low-Li geochem. province, 79-3828; distribution of dissolved Cu, 79-2595; dissolved organic carbon, 79-2553; minerals in manganese microconcretions, 79-4084; faunal provinces and Proto-Atlantic, 79-1056 (3.2); eastern Atlantic, radioactive waste disposal sites, 79-1258; North Atlantic, Caledonian-Appalachian orogen, book, 79-771; fracture zones, side-scan sonar studies, 79-2971; geochem. of basalts, 79-2974; clay minerals as indicators of Cainozoic evolution, 79-2014 (3.4); dissolution of CaCO3 in deep ocean, 79-493; North Atlantic Ridge, generation and aging, 79-3236 (13); NE, sedimentation, 79-1056 (5.2); distribution of basement, 79-1056 (4.5); NE Atlantic

seaboard, crustal structure, 79-1056 (1.2); western North Atlantic, sterol geochem. of sediments, 79-2531; Mid-Atlantic Ridge, FAMOUS petrographic atlas, 79-2006; petrogen, of basalts from FAMOUS area, 79-1293; geochem. variation in basalts, 79-2475; palaeomagnetism of basalts, 79-986; melting experiments on basalts, 79-3648; origin of abyssal tholeiites, 79-297; RE distribution in basalts, 79-444; investigation of oceanic crust, 79-4405; crest topography, 79-3131; Cr-bearing spinels, 79-4077, 4078; gypsum and halite from. 79-2527; Azores, Sao Miguel, volcanic risk map, 79-2956; Terceira, origin of volcanic rocks, 79-4194; opening of Bay of Biscay, 79-1917; Bermuda, organic matter in carbonate cement pore water, 79-3554; Canary Is., Fuerteventura, Late Mesozoic sedimentary rocks, 79-3003; Tenerife, volcanic risk map, 79-2956

Atmospheric tides, 79-3236 (9)

Atomic absorption spectrometry, USGS reference sample of marine mud, 79-2617; geochem. reference samples, 79-2619; Ge in standard rocks, 79-3900; phys, and chem. interferences, 79-3209; anal. of dry powders, 79-3210; anal. scheme for low salinity waters, 79-3212; estimation of SiO<sub>2</sub>, Fe, Al, Ti in bauxite, 79-3211; anal. of siliceous materials, 79-1991; detn. of Ti in silicate rocks, 79-1990; Ca and Mg detn. in silicates and laterites, 79-1993; detn. of Sr in geol. material, 79-49; Eu in phosphoric acid and RE oxides, 79-1994; detn. of trace metals in soils, 79-3255; precious metal traces in rocks, 79-3208; volatile trace metal lead in lunar samples, 79-3970

Atomic spectroscopy, book, 79-2013

AUSTRALIA, geol. sciences, historical review, 79-1908; environmental geology, 79-1255; Archaean shield area, 79-1674; gemstone deposits, economic geol., 79-2429; uranium deposits, 79-1060 (C.2); water storage structures in arid regions, 79-1470; rose-coloured bustamite, 79-2435; kaolins, 79-2014 (7.2); mineral matter in bituminous coals, 79-1801; E, tin provinces, 79-1070 (I.5); SE, concretions in Otway group sediments, 79-3007; central, Mordor complex, potassic intrusion, 79-846; metamorphism and prehistory of granulites, 79-1956; Strangways Range, kornerupine, 79-658; stereochem. of Halibut crude oil, 79-2546; Tasman geosyncline, volcano-genic massive Cu-Zn-Fe deposits, 79-2158

, NEW SOUTH WALES, grain surface features in Late Quaternary deposits, 79-3006; silcrete, petrog. study, 79-1803; stratigraphy of Lamington volcanics, 79-1759; Armidale, multiple laterite surfaces, 79-1909; Broken Hill stratiform Pb-Zn deposits, 79-3525; iron formations and massive sulphides, 79-3524; major elements in lode, 79-1389; garnets as metamorphic indicators, 79-933; amphibolites, 79-4323; chemical metasediments, 79-2158 (31); remobilization during retrograde metamorphism, 79-2158 (32); Cadia, age of intrusion and hydrothermal alteration, 79-1820; origin of Cooma granodiorite, 79-3168; basin characteristics of Hill End trough, 79-1723; Hunter Valley, textures of

ignimbrites. 79-1760: Carboniferous Inverell area, alkali volcanic rocks, 79-1728; Kayrunnera kimberlitic breccia, age of basic inclusion, 79-1016; Kempfield, euhedral and framboidal pyrite, 79-2844; Kiama area, fractional crystallization, 79-3233 (V.1); granitoids of Kosciusko batholith, 79-1725, 1726; Moruya batholith, geochem., 79-1726; New England batholith, origin of quartz-topaz rocks, 79-2940; granitoids from Moonbi district, 79-1727; Newcastle, cupriferous mackinawite, 79-1631; Ravensworth, hypersthene from coal-fire buchite, 79-4019; Sofala, geochem. of metamorphosed basic volcanics, 79-1307; Tamworth, nephrite deposit in Great Serpentine belt, 79-1847; Unanderra, ferrierite, 79-710; West Bogan mine, pseudomalachite, 79-3103; Woodlawn, metal mobility in waters near basemetal sulphides, 79-1323; Woodlawn and Mt. Painter volcanics, geochem. comparison, 79-463; Yetholme, geochem. and heat generation in adamellite, 79-1724

NORTHERN TERRITORY, Amadeus basin, palaeomagnetic directions, 79-992; Harts Range, chrysoberyl, 79-1357; McArthur R. stratiform copper deposit, 79-219; H.Y.C. and associated deposits, 79-231; Simpson Desert sand grains, angularity and silica coatings, 79-886; South Alligator R. area, Zamu dolerite, 79-1718; Woodcutters Pb-Zn-Ag prospect, lateritic weathering profile, 79-502

, QUEENSLAND, porphyry-type Cu-Mo mineralization belts, 79-1185; volcanism in Proterozoic continental margin, 79-1671; econ, geol, of sapphire mining dist., 79-2430; carbonates associated with Permian coals, 79-2521; silcrete, petrog. study, 79-1803; Bowen region, mineral resources, 79-1186; Bowen-St. Lawrence hinterland, Cainozoic volcanic suties, 79-17; Burdekin R. basin supergene enrichment of gold and silver, 79-1187; Chillagoe dist., Split Rock prospect, 79-1220; Collinsville, Mt. Poole Au-Cu deposit, geol. and geochem. investigations, 79-1212; Dadamarine, Triassic volcanics, vents and caldera, 79-1758; Fraser I., weathering of quartz in dune sands, 79-887; Greenvale, nickeliferous laterite, 79-1159; mineralization in Herberton/Mt. Garnet tinfield, 79-1218; Hodgkinson province, O.K. copper deposit, 79-1219; Lowmea amethyst deposit, 79-1358: Mary Kathleen, cordieriteanthophyllite rocks, 79-1846; Biggenden magnetite and bismuth mine, 79-1213; Mt. Hogan gold, silver, uranium prospect, 79-1215; Mt. Isa, metamorphism in Proterozoic igneous rocks, 79-1015; quartz pressure fringes, 79-3048; slag occurrences of djerfisherite and iscorite, 79-2854; folding in Ag-Pb-Zn orebodies, 79-2214; Mt. Kroman Ag-Pb-Au prospects, 79-1214; Mt. Turner Cu-Mo prospect, 79-1217; Westmoreland map area, 79-1216

-, SOUTH AUSTRALIA, volcanism contemporaneous with Late Adelaidean sedimentation, 79-2959; age and petrol. of flow from Beda Volcanics, 79-1957; opal, 79-390; Boucaut volcanic rock suite, 79-1844: Carey Hill, Cement Square baryte deposit, AUSTRALIA, SOUTH AUSTRALIA (cont.) 79-2234, 2236; Deloraine mine, 79-2215; Eyre Peninsula, Cowell, nephrite jade deposit, 79-1845; Wyalla baryte deposits, 79-230; Flinders Ranges, sedimentology of Wirrealpa and Aroona Creek limestones, 79-1804; Gawler Range, evolution of Middle Proterozoic Chandabooka caldera, 79-1719; Iron Knob, kleemanite, new mineral, 79-2881; Lyndoch talc deposits, 79-228, 229; Karawirra lode, 79-2228; Lake Frome area, uranium in Tertiary stream channels, 79-1188; Koppio, amazonite deposit, 79-396; Monarto area, geochem. survey, 79-503; Moralana baryte deposits, 79-227; Mt. Barker to Cape Jervis, soil sampling, 79-504; Mt. Chambers baryte deposit, 79-2232; Mt. Falkland baryte deposits, 79-226; Mt. Frome baryte deposit, 79-2235; Mt. Gambier volcanic complex, geol. history, 79-1959; Mt. Neville baryte deposit, 79-2233; Myponga phosphate deposit, 79-2229; Nairne pyrite deposit, manganochromite and palladium antimonide, 79-2882; metamorphosed sulphides, 79-2851; Olary Province, wollastonite at Ethiudna, 79-2227; Mt. Mulga baryte deposit, 79-225; Oodla Wirra, pedogenic palygorskite, 79-118; Oraparinna, Matthews baryte deposit, 79-2231; zinc phosphates, 79-3102; Reaphook, Spencer Gulf, heavy-metal distribution in marine sediments, 79-3849: Tarcoola region, banded iron formations, 79-1958; Warrioota banded calcite deposit, 79-2230

-, TASMANIA, basalt petrogenesis, 79-845; cleavage in pyrite, 79-3062; Blue Tier batholith, zonation in Sn-bearing granite sheets, 79-1070 (III.5); Adamsfield ultramafic complex, geol. and petrol., 79-871; Derwent Estuary, heavy metals in, 79-1249; Zeehan field, trace elements in

galena, 79-3793 -, VICTORIA, basalt petrogenesis, 79-845; petrogen. of Palaeozoic rhyolites, 79-1720; glass and sulphides in ultramafic xenoliths from Newer basalts, 79-2980; W, thermal history of granitic rocks, 79-1017; Bacchus Marsh, ramsayite-bearing pegmatoidal clot in meta-nephelenite, 79-1722; Camel's Hump and Turritable Falls, trachytic lavas and associated pegmatoids, 79-1721; Mt. Wellington, Cambrian greenstone belts, 79-1774; Tatong, Lr. Palaeozoic sandstones, 79-16

-, WESTERN AUSTRALIA, Archaean massive Ni sulphide deposits, 79-2158 (3); -, WESTERN shale from Hardey sandstone, 79-1802; NW, depositional conditions in Proterozoic rocks, 79-1424; Agnew region, crustal development, 79-14; Carr Boyd mine, georgeite, new mineral, 79-2878; Carr Boyd rocks nickel sulphide deposit, 79-3445; Collie area, metamorphism and mineral corona development in basic rocks, 79-1842; Cundeelee, geol. of area, 79-1669; Darling fault zone, quartz-feldspar mylonite, 79-1841; Fitzgerald Peaks, age of syenitic rocks, 79-1031; Gascoyne Province and Yilgarn Block, geochron, and evolution, 79-1012; Greenbushes, age of tin-bearing pegmatite, 79-1011; minerals from tinfield, 79-3101; Jingemia Cave, sampleite, 79-757; Kambalda, zoned michenerite-testibiopalladite, 79-4097; sedimentary rocks from komatiite sequence, 79-2524; Kimberley basin, Speewah group and Pentecoste sandstone, 79-4269; Kununurra, "zebra" rock, 79-4267; Lake Shaster, monzonitic pluton, 79-1717; Minigwal, geol. of area, 79-1669; Early Proterozoic Nabberu basin and associated iron formations, 79-796; North Pole deposit, H2S-bearing fluid inclusions in baryte, 79-749; Panton sill, chromite compositional variation, 79-4079; Pilbara Block, ages of galenas, 79-15; geochron. data, 79-1014; Archaean shallow-water volcanic-sedimentary facies, 79-4268; Rason, geol. of area, 79-1669; Scotia Ni deposit, 79-1631; nickeliferous mackinawite, Spargoville, sulphide-bearing Archaean ultramafic rocks, 79-2158 (33); Tomkinson Range, granulite-facies rocks in Musgrave block, 79-1843; Wongan Hills area, high Archaean geothermal gradient, 79-1840; Lr. Precambrian of Wyloo anticline, 79-1670; Yalgoo, geol. of map area, 79-1668; Yeddirrie, U deposit in arid surficial environment, 79-1060 (D.5); Yilgarn Block, hornblende-bearing granitoids, 79-1716; jaspilitic iron-ore deposit, 79-1183; stable isotope ratios in Archaean rocks, 79-416; Archaean tectonics in Agnew supracrustal belt, 79-932

AUSTRIA, Alps, Valle Grosina, granitoid gneisses, 79-4307; Habachthal, mineral locality, 79-973; friedrichite, 79-4117; gemquality phenakite, 79-3768; Knappenwald, epidote locality, 79-970; Leckbachscharte, aeschynite, 79-4087; Lend, todorokite, rancieite, evansite, 79-3097; Mittersill, scheelite, 79-971; Ötztal-Stubai Alps, O and H isotope study of polymetamorphic area, 79-1446; Pinzgau, minerals from, 79-966, 967; Rauris, mineral occurrences, 79-1897; Saalfelden, mineral locality, 79-972; Salzburg, topaz, 79-964; Steiermark, Koralpe, region metamorphism at low CO2 partial pressure, 79-1831; Stubachtal, minerals from, 79-965; Tauern window. fluid inclusions in quartz, 79-3792; gold prospecting, 79-968; Totenkopf, minerals of peridotite-serpentine complex, 79-969; high-Al amphiboles from western Tauern window, 79-1601; Webing, Cu minerals in diabase cleft, 79-3096

Autunite, Switzerland, 79-1890

'Avicennite, Nevada, occurrence at Carlin gold deposit, 79-1627

Axinite, Cornwall, 79-1817; California and Alaska, ferroaxinite, 79-1596

Azoic dye, synthesis of complexes with phyllosilicates, 79-99

Azoproite, Russian SFSR, 79-730, 901 Azurite, DTA, TG, 79-680

Babingtonite, Italy, chem., opt., X-ray, 79-4026

Bacteria, in petroleum biodegradation, 79-2580

Baddeleyite, Russian SFSR, 79-730

BALTIC SEA, Baltic Shield, polyphase deformed metamorphic rocks, 79-2158 (30); Landsort Deep, mineral phases in anoxic sediments, 79-3863

Baratovite, USSR, crystal structure, 79-3362 Barium, detn. in geochem. reference samples,

79-2635; diffusion in basalt melt, 79-1294; partition between alkali feldspar and silicate liquid, 79-1285; diffusion in obsidian, 79-1284; position of ion in Ba-saturated hectorite, 79-2114

compounds, BaO, atomic charge density, 79-178; barium titanate, penetration twins in, 79-3335; Ba(NO<sub>2</sub>)<sub>2</sub>.H<sub>2</sub>O, piezoelectric, electro-optic, dielectric, elastic, thermoelastic props., 79-201; silica-rich barium silicates, crystal chem., 79-3349 (27)

Bartonite, California, new mineral, anal., 79-763; age detn., 79-1

Baryte, 79-1370; thermoluminescence, 79-949; Switzerland, 79-1891; mixed crystals with selestine, 79-4100; Sardinia, 79-3118; South Africa, detrital beds in Karroo supergroup, 79-1235; Japan, crystal structure, 79-1145; Western Australia, H2Sbearing fluid inclusions, 79-749; British Columbia, origin in Devonian carbonate rocks, 79-1240; Alabama, 79-3117; Mexico, structure refinement, 79-3412

deposits, France, 79-3529; South Australia, 79-225-227, 230, 2231-2236; Nevada, stable isotope studies, 79-1391

Basalts, crystallization, 79-3693; crystallization in MgSiO<sub>3</sub>-rich part of CaSiO<sub>3</sub>-Al<sub>2</sub>O<sub>3</sub> plane, 79-2376; trace elements in standard rock, 79-2612; USGS standard rock, thermoluminescence, 79-953; submarine, mineralogical studies, 79-867; submarine pillow lavas, alteration, 79-3661; hydrothermal alteration by sea-water, 79-2308; oceanic, U exchange during lowtemp. alteration, 79-2474; differential Sm/Nd evolution, 79-2495; effect of lowtemp. alteration on oceanic K budget, 79-3875; deep-sea, clinopyroxenes from, 79-2788; Cainozoic, distribution of silicasaturation components, 79-810; silica saturation and oxidation state, 79-811; ophiolite --, chem. regularities and genetic significance, 79-1407; crystallization intervals in basalt-andesite-H2O, 79-1308; Zr and Nb partition, 79-1287; diffusion experiments, 79-284; diffusion of Eu and Gd, 79-1286; experimental fusion, comparison of capsules and wire hooks, 79-3577; oceanic island -, electrical props., 79-1875; flow and emplacement direction from magnetic susceptibility anisotropy, 79-1868; lanthanide mobility during hydrothermal alteration, 79-444; alteration by hydrothermal activity, 79-2014 (4.3); alkali, genesis, 79-3233 (II.10); effect of CO2 on liquidus relations, 79-3649; crystallization under controlled  $P_{\rm O}$ , and  $P_{\rm H,O}$  conditions, 79-2293; alkalic and tholeitic, silica activity and classification, 79-4171; stability of amphiboles in, 79-2389; DSDP Leg 34, effects of cooling rate, 79-4235; clay mineral formation, 79-1093; Leg 37, trace element geochem., 79-465; Legs 45 and 46, residual glasses and melt inclusions in, 79-2973; lunar and terrestrial, shock metamorphism, 79-1507; compositional dispersions, 79-1508; immiscible liquid phases, 79-4170; lunar mare —, and mid-ocean ridge basalts compared, 79-2661; planetary, redox state, 79-2655; France, Iherzolite xenoliths in, 79-1707; Germany, clay minerals in basalt-saliniferous deposit contacts, 79-106; Russian SFSR, from Early Basalts (contd.)

Quaternary volcanoes, 79-2963; Iceland, 79-2969, 2970: columnar -, magnetic susceptibility, 79-3079; Atlantic Ocean, RE behaviour during weathering, 79-3826; Mid-Atlantic Ridge, geochem. variation, 79-2475; from FAMOUS area, petrogen. 79-1293; melting experiments, 79-3648; North Atlantic, geochem., 79-2974; Israel, weathering, 79-108; Miocene-Pliocene age detn., 79-1007; O and Sr isotopic studies, 79-461; Iran, palaeomagnetism and ore mineralogy, 79-3085; South Africa, melilite, age, palaeomagnetism, chem., 79-1009; Indian Ocean, RE and Rb/Sr systematics, 79-3827; India, metasomatized xenoliths in trachyte, 79-4284; abundance in granitic rocks, 79-2486; weathered, ground water quality, 79-1466; Taiwan, ultramafic inclusions and high pressure megacrysts in, 79-4198; zeolite-facies metamorphism, 79-4318; Japan, picrite, dendritic titanaugite in, 79-2791; China, Cainozoic, petrochem., 79-458, 1715, 3822; Pacific Ocean, chrome spinels in, 79-4245; Hawaii, hydrothermal alteration, 79-1763; melting and crystallization relations, 79-2294, 2295; thermoluminescence dating, 79-3187; volatile abundances, 79-2984; pillow-, H2O, C, S in glassy rims, 79-1409; Australia, integrated petrogenetic model, 79-845; New Zealand, hydrothermal metamorphism, 79-1821; New Zealand and Quebec, pillow comparison of ferric oxide crusts, 79-464; Antarctica, from back-arc spreading centre, 79-3821; Greenland, Tertiary flood basalts, chem. petrol., 79-1695; Newfoundland, arfvedsonite in dykes, 79-678; Nova Scotia, K/Ar isochron age, 79-3171; NW USA, natural and artificial weathering, 79-1088; Arizona, xenolith-bearing, petrogen., 4230; California, fusing granodiorite, 79-1822; Connecticut, tholeiitic, silicate-liquid immiscibility, 79-4208; New Jersey, time relation to faulting in Newark graben, 79-1736; Oregon, Tertiary, petrochem., 79-4209; Peru, 79-1744

Basaltic glasses, viscosity at 1 atm., 79-2317; Pacific Ocean sea-floor, He, Ne, Ar comp., 79-2493

-lavas, Mexico, phenocrysts and megacrysts in, 79-2967

-liquids, plagioclase buoyancy, 79-2410; lunar, distribution of Fe and Mg with olivine, 79-2311

-magmas, tholeiite and alkali, lighter differentiates, 79-4169; oxygen fugacity and role of gas-forming elements, 79-2896

- -melts, random close packing and structure, 79-3349 (52); diffusion of Ca, Sr, Ba, Co, 79-1294; comp. changes in wire loop Pt<sub>80</sub>Rh<sub>20</sub>, 79-2274; loss of Fe and Na using wire-loop method, 79-2275, 3575; supercooling and delay in olivine nucleation, 79-3609; Ni<sup>2+</sup> partitioning with olivines, 79-1282
- volcanism, implications of mid-ocean ridge axis structure and kinematics, 79-2968

Basaluminite, crystallization from dilute aluminium solns., 79-1082

Basic rocks, Turkey, pyroxenes from, 79-1597; Western Australia, metamorphism and mineral corona development, 79-1842 Bassanite, Switzerland, 79-4376

Bastnäsite, Virginia, 79-1741 group, lanthanides, in 79-4105

Bauxite, Athens International Congress, 79-2007; nickel in, 79-2190; bioleaching, 79-2007 (15); comparative chem. investigation, 79-2007 (25); geophys. prospecting, 79-2007 (26); refractory-grade calcined bauxite, min. props., 79-271; crystallization of aluminium hydroxyide in, 79-3291; age and origin, SEM study, 79-2217; low-grade, beneficiation, 79-2237; estimation of silica, Fe, Al, Ti in, 79-3211; France, min. and geochem., 79-2007; structure and genesis, 79-3530; Italy, comp., origin, geotectonic significance, 79-1233; Hungary, mineral resource management, 79-2007 (11, 12); oolitic textures, 79-2007 (18); Yugoslavia, 2007 (16); structure controlled deposits, 79-2007 (7); geol., 79-2007 (10); exploitation, 79-2007 (14); Greece, magnetic props. of Mössbauer spectra, 79-2007 (1); oolitic and pisolitic structures, 79-2007 (2); palaeogeog. and gitology, 79-2007 (5); primary and secondary karst in, 79-2007 (6); genesis, 79-2007 (22); mineralogical comp., 79-2007 (23); karstic deposit, rancieite from, 79-1629; India, mineralogy, geochem., genesis, 79-2007 (3, 13); North Vietnam, mineralogy, geochem., genesis, 79-1179; Cuba, photointerpretation of deposit, 79-2238

Bay of Biscay v. Atlantic Ocean

Bayerite, Gibbs free energy of formation, 79-2302; hydrogen bonding, 79-3349 (64); hydrogen positions in 79-3401

Bayldonite, France, 79-1887 Bazzite, Switzerland, 79-1892

Beidellite v. smectite

BELGIUM, petrol. of K-bentonite beds, 79-2014 (3.9); Ardennes, geochem. exploration in stream sediments, 79-1479; chlorite in quartz veins, 79-4039; Ottré, ottrelite, 79-2777; Philippeville, pyrite crystal aggregates, 79-736

BELIZE, aragonite-calcite transformation in marine gasteropod, 79-1636; geol. of Maya

Mts., 79-4167

Bentonite, effect of grinding on structure and behaviour, 79-2051; membrane for salt sieving, 79-3283; France, 79-2163; Belgium, petrol. of K-bentonite beds, 79-2014 (3.9); Pakistan, petrol. of Karak bentonite, 79-113; Wyoming, effect of sulphate ions on stability, 79-3282 Bergenite, 79-767

Bernoullian samples, Lorentzian line profiles in diffraction spectra, 79-1099

Bertrandite, Austria, 79-1897

Beryl, opt., 79-4329; biaxiality, 79-938; refractive indices and S.G., 79-3763; channel constituents, 79-1595; lineage and sectorial structure, 79-1125; Norway, 79-823; large crystals, 79-2783; France, Switzerland, 79-4376; Afghanistan, 79-2438; Manitoba, from Tanco pegmatite, 79-4015; Utah, red, 79-3119; Brazil, growth defects in single crystals, 79-1300; star-beryl and its inclusions, 79-4017; Maxixe-types compared, 79-2431

-, aquamarine, Brazil, growth characteristics, anal., opt., X-ray, 79-4016

emerald, internal textures and growth conditions, 79-3762; appearance and disappearance of crystal faces during flux

growth, 79-3761; Russian SFSR, colour characteristics, 79-385; Africa, 79-386; Rhodesia, occurrence and mineralogy, 79-387; Western Australia, emerald deposits, 79-2429; Colombia, inclusions in, 79-384

Beryllium, detn. in rocks and minerals, 79-1054; behaviour during weathering of biotite and phlogopite, 79-2068; 10Be in Pacific Ocean surface water, 79-3878; beryllium diamond support for high P X-ray diamond-anvil cells, 79-2277

mineral stabilities, multisystems analysis, 79-1335

Betafite, Canada, 79-233

Beudantite, France, 79-1887

BHUTAN, Himalayas, stratigraphy structure, 79-3248 (10)

Biaxial dimetric crystals, thermal transformation, 79-1305

Bicchulite, crystal structure, 79-1108

Bilibinskite, USSR, new mineral, anal., opt., X-ray, 79-4112

Billingsleyite, 79-191

Bindheimite, Greenland, 79-4098

Vermont, Biopyriboles, descriptive mineralogy, 79-1658

Biostratigraphic correlation, 79-71 (16)

Biotite v. mica

Birnessite, in manganese nodule, 79-426; Finland, 79-428; Atlantic Ocean, calcian, in manganese microconcretions, 79-4084; Pacific Ocean, anal., X-ray, 79-4085

Bismuth compounds, BiTe and Bi<sub>4</sub>Te<sub>3</sub>, crystal structure, 79-2135; bismuth oxides, powder patterns and structures, 79-2125; mixed oxides with layer structure, 79-2124; Bi<sub>2</sub>Fe<sub>4</sub>O<sub>9</sub>, magnetic structure, 79-1136; Bi<sub>2</sub>W<sub>2</sub>O<sub>9</sub>, new layered structure, 79-2126

deposits, France, 79-3510; Germany, Bi-Co-Ni-Ag-U formation, 79-2187; Queensland, drilling programme, 79-1213

Bismuthinite-aikinite series, composition representation, 79-4096

Bixbyite, Utah, 79-3118

BLACK SEA, distribution of U, Io, Ra, Th, 79-1465; stenols and stanols in oxic and anoxic waters, 79-3890; Danube R. delta, comp. of bottom sediments, 79-2999

Blast furnace slags, utilization, 79-2325

Blueschist-facies rocks, rutile and sphene in, 79-1165; *P-T* hysteresis cycle, 79-3022

Boehmite, 79-2418; Gibbs free energy of formation, 79-2302; dehydration porous microstructures, 79-2346

Bohdanowiczite, Poland, anal., X-ray, 79-

BOLIVIA, Sn-rutiles in tin deposit, 79-2834; Andes, Upper Cainozoic volcanics, 79-1031; Oruro, coexisting kesterite and stannite, 79-3406

Bombiccite, Italy, crystal structure, 79-3431 Boracite, Li-, crystal structure and ionic conductivity, 79-196

Borate structures, hydrogen bonding, 79-199; transition metal —, structural studies, 79-3349 (36)

Bornite, stability and crystal structure, 79-3403; Poland, 79-2189, 2850; British Columbia, 79-232

Boron, detn. in high-purity Al metal, 79-2003; detn. in minerals by local radiographic anal., 79-3781; mapping and partitioning in synthetic and natural systems, 79-292; effect on granite solidus, 79-3650; conBoron (contd.)

centration in carbonaceous chondrites, 79-2723; distribution in *West Carpathian* ultramafic rocks, 79-3810; *USSR*, in Triassic sedimentary rocks, 79-2520; *Western Australia*, in sedimentary rocks, 79-1424; *Canada*, in *Melville I*. group, 79-891

BOTSWANA, metallogeny of Limpopo mobile belt, 79-2901 (15); mineral resources inventory, 79-2192; inclusions in agate, 79-402; *Dikoloti* and *Lentswe*, Ni-Cu occurrences, 79-2158 (9); *Francistown* and *Phikwe*, geol. of area, 79-2902; stream sediments from *Gaborone* granite, 79-2605; *Mahalapye*, geol. of area, 79-2904; *Ngamiland*, gravity survey, 79-2903; *Orapa*, mineralogy of xenoliths, 79-3233 (II.2)

Boulangerite, Switzerland, 79-3095

Boyleite, Germany, new sulphate mineral, chem., opt., X-ray, 79-1647

Bracewellite, Guyana, 79-4081

Brachiopods, New Hampshire, chem. and O isotopic metasomatism, 79-3874

Braggite, South Africa, chem., X-ray, 79-1632 Braided-river depositional environment, review, 79-1785

Brandtite, first USSR find, opt., 79-2837

Brannerite, *China*, orthobrannerite, new variety, anal., opt., X-ray, 79-766

Brannockite, North Carolina, 79-982

Braunite, Brazil, 79-1226 Bravoite, Sweden, 79-221

BRAZIL, growth of aquamarine crystal, 79-4016; mineralogy of star beryl and inclusions, 79-4017; growth defects in beryl, 79-1300; inclusions in agate, 79-402; garnierites, occurrence, min., chem., 79-2813; Early Precambrian granulites, 79-4327; volcanic belt compared with that in Angola, 79-4410; Alto Feio pegmatite, rose quartz from, 79-1903; Amazon basin, radar and ground reconnaissance, 79-1687; Amazon estuary, dissolved humic acids, 79-239; Bahia, sodalite and associated minerals, 79-1902; geol. and mineral resources, 79-2205; Bahia, Amazon, Goias, chem. of soils, 79-2539; Brumado dist., minerals from magnesite deposit, 79-3120; Conselheiro Pena, gem tourmaline, 79-3122; Galileia, ludlamite, 79-3121; Goias, zircon, 79-3119; Grota do Coxó, amethyst in geodes, 79-3765; stereochem. of Irati shale, 79-2546; Itabira, arsenopalladinite, 79-2855; Jacupiranga, Fe-Ti oxide and sulphide minerals in carbonatite, 79-4076; ilmenite and clinohumite from carbonatite, 79-1626; Lavra Jabuti, epitaxial wodginite and cassiterite, 79-2833; Liberdade, lateritic nickel deposit, 79-435; Maranhão basin, palaeomagnetism of Mesozoic igneous rocks, 79-4409; Minas Gerais, hureaulite, 79-3118; Corrego do Urucum, black elbaite, 79-661; Ilha de Taquaral pegmatite, whiteite, new mineral, 79-770; Maxixe mine, beryl, 79-2431; Quadrilátero Ferrifero, metamorphic rocks, 79-937; Ouro Preto, sherry-brown topaz, 79-3764; Pará, Buritirama, manganese deposits, 79-1226; Rio Grande do Norte, mineral resources, 79-2206; São Mateus do Sul, hydrocarbons in Irati oil shale, 79-1437; São Paulo State, geochem. of charnockites, 79-1969

Breccias, North Wales, 79-2173; Yukon,

mineralized, Early Proterozoic age, 79-

Brenkite, *Germany*, new mineral, anal., opt., X-ray, 79-764

Brewsterite, structure refinement, chem., 79-

Brickworks, *Germany*, metal pollution in grass and soil, 79-1252

Brindleyite, *Greece*, new mineral, chem., 79-1648

Brines, geothermal, calculating density and vapour pressure, 79-1298; *Dead Sea*, recovery of Li, 79-1237; *Ohio*, Sr isotopic comp., 79-2579

BRITISH ISLES, Caledonide orogen, 79-771 (11, 12, 15); *Isle of Man*, K/Ar ages from ore deposits, 79-3153; evolution related to development of N. Appalachians, 79-1056 (1.1); development of continental margin between *Greenland*, 79-1056 (4.6)

Brochantite, DTA, TG, 79-680; France, 79-

1887; Greenland, 79-4098

Brown millerite, formation kinetics, 79-3666 Brucite, 79-4291; dehydration, 79-1315; thermal decomposition by thermosonimetry, 79-2349; *Turkey*, 79-2811

Brushite, crystal structure, 79-1146; *Germany*, suspended in water of *Neckar R.*, 79-1251 Buchite, *Greenland*, xenolith with Al-armal-

colite and native Fe, 79-4069

BULGARIA, W-Mo deposits, 79-1070 (1.4); neutron activation anal. of soils, 79-3228; origin of sedimentary glauconites, 79-1794; S, Zr/Hf ratio in zircons, 79-651; Madan orefield, geochem. of Ga, 79-432; Strashimir deposit, exsolutions in chalcopyrite, 79-739; Rhodope Mts., zeolites, 79-935; jaspilites in Precambrian, 79-923; secondary quartzite facies varieties, 79-307; pegmatite types of various ages, 79-455; Sofia dist., Svidnja, Nb and Ta in potassium-alkaline lamproitic rocks, 79-454; Struma R. basin, post-Pliocene volcanic activity, 79-69 (5)

Burbankite isotypes, La<sub>3</sub>Ca<sub>3</sub>[BO<sub>3</sub>]<sub>5</sub>, crystal

structure, 79-1142

Burckhardite, *Mexico*, new mineral, chem., opt., X-ray, 79-4113

BURMA, Monywa Cu-deposit, 79-2185, 2186; Namshamaw-Bank, maw-sit-sit, 79-1359

Buserite, synthetic, reversibility of lattice collapse, 79-2014 (6.2)

Bustamite, Australia, rose-coloured, opt., 792435

Buttgenbachite, crystal structure, 79-75

Cadmium, in rock reference samples, 79-2613
— compounds, coprecipitation of Cd and Fe sulphides, 79-237; structures of cadmium "apatites", 79-211, 212

Caesium, in coastal sediments, 79-3846; <sup>137</sup>Cs migration in lake sediments, 79-2505; in K-feldspars, 79-696; sorption and desorption behaviour in kaolinites, 79-90

— compounds, Cs<sub>2</sub>S<sub>2</sub>O<sub>6</sub>, piezoelectric, electro-optic, dielectric, elastic, thermoelastic props., 79-201; Cs<sub>2</sub>PtCl<sub>4</sub>, crystal structure, 79-3416

Calc-alkaline magmas, formation model, 79-806-808

Calcareous concretions, bibliog., 79-126 Calcification of organisms, 79-3839

Calcite, stacking faults in twinned crystals,

79-3349 (63); goniometry, 79-1036; lengthslow and length-fast crystals, 79-1633; displacive growth, 79-1787; magnesian, synthesis, 79-2358; Titan-yellow staining, 79-47; modifications to DTA curve, 79-4103; thermoluminescence dating, 79-1936; of different genesis, thermoluminescence, 79-3063; boron content, 79-3781; stability with plagioclase, 79-2420; sodium coprecipitation, 79-333; heavy metal coprecipitation, 79-1250; calcite-dolomite geothermometry in carbonatites, 79-4102; dissolution by fossil fuel CO2, 79-2507; orthophosphate uptake from sea-water, 79-2365; absorption of amino acid-containing organic matter, 79-2555; aragonite-calcite transformation in marine gasteropod, 79-1636; fabrics in speleotherms, 79-753; from coralline alga, magnesium in, 79-1635; Norway, 79-823; Iceland, 79-1880; England, grains containing phosphorus in soil, 79-3328; Avon, 79-1882; Germany, 79-4374; calcite-depositing spring system, 79-2578; Switzerland, 79-1891; Alps, Mn -, phase relations in metamorphic assemblages, 79-670; Greece, magnesian, 79-1837; Turkey, 79-2811; USSR, morphological development, 79-752; Egypt, pale green, impurity-related centres, 79-1634; Japan, 79-2794, 2864; C isotopic study, 79-1388; South Australia, banded deposit, 79-2230; New Zealand, 79-1672; Colorado and Utah, 79-1810; New Mexico, in syntaxial cements, 79-897; Tennessee, 79-3119; Texas, cementing sandstones, 79-2536; Wyoming, "eggshell diagenesis" and radial fabric in ooids, 79-3013; Brazil, 79-1902

Calcium, diffusion in basalt melt, 79-1294; AAS detn. in silicates and laterites, 79-1993; diffusion in simple silicate melt, 79-3618; pressure-dependent solubility in

forsterite, 79-3686

-compounds, CaO, atomic charge density, 5CaO.3Al<sub>2</sub>O<sub>3</sub>, 79-178; Ca<sub>2</sub>Mn<sub>3</sub>O<sub>8</sub> crystal structure, 79-3349 (34); tetracalcium aluminoferrite, formation kinetics, 79-3666; CaCO<sub>3</sub>, dissolution in deep ocean, 79-493; Ca(NO<sub>3</sub>)<sub>2</sub>.4H<sub>2</sub>O, crystal structure, 79-200; calcium metaborates, hydrogen bonding, 79-3349 (39); CaMn(B2O5), crystal structure, 79-2128; CaCl<sub>2</sub>, solubility, 79-3680; CaCl<sub>2</sub>.6H<sub>2</sub>O, crystal structure, 79-217; CaSiO<sub>3</sub> polymorphs grown from supercooled melts and glasses, 79-308;  $Ca_2SiO_4$ , high-pressure  $K_2NiF_4$  isotype, 79-1332; crystal growth from flux, 79-3349 (55);  $\beta$ -dicalcium silicate, crystal structure, 79-153; formation kinetics, 79-3667; Ca<sub>2</sub>Al<sub>2</sub>SiO<sub>2</sub>, high-pressure phase, 79-375;  $\alpha$ -Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>, crystal structure, 79-209; Ca<sub>2</sub>HPO<sub>4</sub>SO<sub>4</sub>.4H<sub>2</sub>O, crystal structure related to brushite and gypsum, 79-1146

- isotopes, fractionation in Earth and Solar System materials, 79-2452

Caledonian-Appalachian orogen of North
Atlantic region, 79-771

Calorimetry, application to petrology, 79-3236

Calzirtite, Russian SFSR, 79-730, 731, 901 CAMEROON, granitoids, petrog., and geochon., 79-1008

CANADA, rock analysis methods at Geo-

CANADA (contd.)

logical Survey, 79-3204; mineralogy and publication, 79-4389; Geological survey radiocarbon dates, 79-29; geophys. review of continental margin, 79-4402; Zn/Cd ratios in sphalerites, 79-418; tin in stratabound massive sulphide deposits, 79-1070 (VI.1); U and Th in Precambrian basement, 79-3873; uranium minerals, 79-1060 (B.1); uranium deposits, 79-1060 (C.1); uranium deposit location using lake sediments and waters, 79-1481; comp. of green garnets, 79-4009; chem. of micas from kimberlites and xenoliths, 79-2807; Dunedin formation, transgressive shelf carbonate sequence, 79-893; Frontenac axis, <sup>40</sup>Ar/<sup>39</sup>Ar dating of dykes, 79-1020; Archaean shield area, 79-1674; volcanogenic massive Cu-Zn-Fe deposits, 79-2158; Appalachian orogen, 79-4406; synthesis, 79-771 (18); Canadian Shield, O isotope comp. of crystalline rocks, 79-1451; geochrom. of continental crust formation, 79-20; Bear-Slave structural province, geochron. of granitic rocks, 79-19; French R. area, regional metamorphism and U/Pb ages of zircons, 79-22; Hudson Bay lowlands, Mesozoic deposits, 79-235; Lake Erie, heavy metal pollution, 79-2245; Ottawa R., mercury in sediments, 79-3548; sorption of Hg, Cd, Cu, Pb by sediments, 79-2529; Tintina Trench, Zn-Pb deposits in northern Cordillera, 79-3491

-, ALBERTA, oil sand deposits, mineralogical review, 79-894; Peace R. district, oolitic iron deposits, 79-2216; nontronite and ferruginous opal, 79-2821; S. Ram R., joints in Cardium strata, 79-802

-, BRITISH COLUMBIA, gravity and structure of active margin, 79-4408; lode gold deposits, 79-1192; stream-sediment geochem. data, 79-1483; shackanite and related analcite-bearing lavas, 79-1710; thomsonite, 79-4062; electron microprobe, XRD, spectral studies of 'jades', 79-3368; selective weathering of granitic clasts, 79-3307; chem. variation in Coast plutonic complex, 79-3831; NE, baryte in Devonian carbonate rocks, 79-1240; Birth I., genesis of Rexspar uranium-fluorite deposit, 79-234; Bluebell mine, forsterite-fayalite-tephroite series and knebelite, 79-2751; Giant Mascot nickel sulphide deposits, 79-3445; Highland Valley, clay minerals in Valley Copper porphyry deposit, 79-120; sulphide zones and hydrothermal biotite alteration, 79-232; Jervis Inlet, manganese deposition and nodule growth, 79-1432; Khatada Lake complex, cordierite formed from garnet, 79-2756; Kitimat, geotectonics of Cretaceous and Eocene plutons, 79-999; Mt. Raleigh area, homogenization of zoned garnets, 79-2757; Okanagan, early recumbent folding in Shuswap complex, 79-4156; uranium in alkaline waters, 79-1484; Pinchi Lake, geol. and evolution of fault zone, 79-801; Pitt Lake, sedimentation rates by radioactive fallout, 79-3549; Prince Rupert, ages of Ecstall, Kitkiata, Quottoon plutons, 79-3175, 3176; Quottoon pluton, thermal effects of igneous intrusion, 79-4356; Robb Lake deposit, carbonate-hosted Pb-Zn occurences, 79-1223; Saanich Inlet, inter-

stitial water chem. in sediments, 79-2592; Southern Park Ranges, metamorphism, structure, stratigraphy, 79-2910, 2911, 4157, 4158; Trial, pre-Carboniferous base-79-3052; oxide minerals in Turnagain ultramafic complex, 79-2836

-, LABRADOR, major-Aphebian-Helikian unconformity, 79-2912; thermal history of subsidence of rifted continental margins, 79-4404; continental margin, Mesozoic and Cainozoic sediments, 79-1682; twinning and exsolution in antiperthite, 79-1612; clinopyroxenes from agpaitic rocks, 79-4018; N, Archaean gneiss complex, U-Th-Pb ages, 79-3172; Greenland-Labrador craton, Sr evolution, 79-2528; Labrador trough, metamorphism of Proterozoic ironformation, 79-1849; Labrador Shelf, clay minerals of Mesozoic-Cainozoic sequences, 79-119; source and diagenesis of ancient sediments, 79-3861; hydrocarbons from ancient sediments, 79-3862; Harp Lake complex, palaeomagnetism, 79-1000; Kiglapait layered intrusion, 3-D gravity anal., 79-2944; fractionation trend, 79-268; Nain complex, osumilite, 79-657; 1594; age of adamellites, 79-24; anorthosite and associated plutons, 79-1732; Saglek area, zircon ages for Uivak II gneisses, 79-3173; Archaean tonalitic and trondhjemitic gneisses, 79-3231 (7); Seal Lake, stratiform copper deposit, 79-219

-, MANITOBA, isotopic studies of ore-leads, 79-21; Bernic Lake, beryl from Tanco pegmatite, 79-4015; polucite, 79-4059; černýite, 79-4114; Flin Flon, heavy metals in polluted lakes and streams, 79-2239; Island Lake, Archaean greenstone belt, 79-1677; Snow Lake, sphalerite geobarometry, 79-2851; metamorphic zones, 79-3053; Superior province, tectonic evolution of greenstone belts, 79-1676; petrochem., tectonics of plutonic rocks, 79-3231 (10); Thompson nickel belt, geol., geochron. relationships, 79-1022, 1023

-, NEW BRUNSWICK, zoned epidote nodules from sedimentary rocks, 79-905; volcanogenic massive Cu-Zn-Fe deposits, 79-2158 (3); origin of minettes, 79-2497; 79-3385; alkali feldspars, Appalachians, tectonostratigraphic zones, 79-804; Bathurst, volcanic rocks from Tetagouche group, 79-1411; Mt. Pleasant deposit, mineral catalogue, 79-3105; porphyry tungsten zones, 79-1222; distribution of alteration minerals and metals, 79-3799; St. George pluton, alkali feldspars

in granites, 79-694

, NEWFOUNDLAND, zinc deposits, 79-236; Phanerozoic peridotitic and pyroxenitic komatiites, 79-2985; Avalon zone, extent, geophys. evidence, 79-4368; volcanic and intrusive rocks, 79-4207; age of Roberts Arm group, 79-3170; origin of Twillingate trondhjemite, 79-3231 (16); W, evolution of fracture zone, 79-3136; contrasting trondhjemite associations, 79-3231 (15); Newfoundland Ridge, nature of crust, 79-1681; Appalachians, tectonostratigraphic zones, 79-804; Bay of Islands, ophiolite suite, 79-2987; seismic velocity structure, 79-1873; Bonavista Bay, age, geol. of Newport granite, 79-3169; Botwood group and Mt. Painter batholith, palaeomagnetism and orogenic history, 79-4160; Buchans, arfvedsonite in basalt dykes, 79-678; Burlington Peninsula, U/Pb ages of crystalline rocks, 79-26, 27; Colliers, Late Precambrian ash-flow tuffs of Harbour Main group, 79-2945; Indian Head Range complex, ages of hornblende and biotite, 79-1024; Mt. Peyton batholith, bimodal calc-alkaline suite, 79-4206; Notre Dame Bay, ophiolitic detritus in flysch, 79-2986

-, NORTHWEST TERRITORIES, diagenesis of organic matter and fine clay minerals, 79-2086; Arctic Canada, tectonic history of Innuitian province, 79-4403; Baffin I., Upper Proterozoic sedimentary and volcanic rocks, 79-800; lapis lazuli, 79-4321; Boothia uplift, palaeomagnetism and ages, 79-1021; Cantung, intrusion and scheelite mineralization, 79-18; Cornwallis Pb-Zn district, Mississippi Valley-type deposits, 79-1193-1195, 3494, 3495; fold belt and basement uplift, 79-799; Devon I., Haughton astrobleme, mid-Cainozoic impact crater, 79-1584; Great Slave Lake, Ir. Aphebian alkaline plutonic and hypabyssal rocks, 79-2943; Mackenzie, ages of dolerites, 79-25; Mackenzie Mts., submarine carbonate breccia beds, 79-3009; Proterozoic Rapitan group, 79-892; mineralization at *Nite* copper prospect, 79-2202; Mackenzie Valley, comp. and reactivity of river sediments, 79-1425; Melville I. group, mineralogy, 79-891; Melville peninsula, serendibite, 79-2782; Archaean Prince Albert group volcanics, 79-2496; Muskox intrusion, infiltration metasomatism, adcumulus growth, secondary differentiation, 79-4205; Somerset I., garnet lherzolites, 79-2942; carbonate-evaporite cycles, 79-890; Elwin Bay kimberlite, ultramafic xenoliths, 79-850; Somerset and Prince of Wales Is., palaeosalinity and dolomitization of carbonate sequence, 79-1430; Tungsten, skarn silicates from scheelite orebody, 79-4032; Yellowknife, origin of Archaean granitic rocks, 79-3824; metamorphism and deformation in Archaean metasedimentary rocks, 79-3051; vein geometry and hydrostatics during mineralization, 79-1191; garnet aggregates, 79-2761

-, NOVA SCOTIA, thermal history and subsidence of rifted continental margins, 79-4404; age studies on slates, 79-28; polycylic aromatic hydrocarbons in soils, 79-2547; Cape Breton I., base metal and uranium distribution along Windsor-Horton contact, 79-433; K/Ar isochron of North

Mt. basalt, 79-3171

79-4097; , ONTARIO, michenerite, uranium deposits, 79-1060 (C.4); layered komatiitic lava flows, 79-852; anomalous Li in Kewenawan rhyolites, 79-2498; RE in Huronian sedimentary rocks, 79-3852; lepidocrocite in soils, 79-3314; morphological changes in weathered micas from soils, 79-2071; NW, Archaean gneiss dome as immature diapir, 79-1678; geochem. of Archaean granitoids, 79-3231 (11); Bancroft, radioactive occurrences in Grenville province, 79-233; Coldwell alkaline complex, mafic mineralogy of ferroaugite syenite, 79-2789; Creighton pluton, forceful emplacement, 79-4159; Dome mine,

## CANADA, ONTARIO (contd.)

Archaean precious-metal hydrothermal systems, 79-3492, 3493; Elliott Lake, uranium deposits, 79-1060 (D.3, 4); geochem. of carbonate-rich Espanola formation, 79-3835; Gunflint iron formation, min., petrol., 79-934; Lac des Isles, vysotskite, 79-1632; Lake Despair area, chronology of Rainy Lake Archaean granitoid batholith, 79-1962; Mamainse Point, Keweenawan palaeomagnetic reversals, 79-4407; Munro Township, RE in layered komatiite lava flow, 79-466, 1413; peridotitic komatiitic lavas, 79-290; Onakawana area, coal deposits, 79-235; Sault Ste. Marie, radiocarbon dating of Nipissing Great Lake events, 79-1963; Shaw Dome, Archaean ultramafic rocks, 79-2604; Shebandowan Lakes, ferromanganese concretions, 79-2530; Skeleton Lake, Palaeozoic impact crater, 79-4003; Sudbury, nickel sulphide deposits, 79-3445; ages of dolerites, 79-25; Thanet gabbro complex, magnetic overprinting, 79-1867; Timmins area, immobile trace elements and Archaean volcanic stratigraphy, 79-3829; Umfraville gabbro, palaeomagnetic, K/Ar study, 79-3174; Wabigoon volcanic-plutonic belt, RE distribution in granitoid plutons, 79-3830; Whetstone Lake area, zoned garnet, 79-2759; York, muscovite, 79-1114

-, OUEBEC, palaeomagnetism of Seal group igneous rocks, 79-4370; S, ophiolites, 79-1777, 1778; Champlain Sea, diagenetic iron sulphide formation in sediments, 79-3854; Manicougan impact crater, 79-2740; stratigraphy, petrol., chem., 79-2741; chem. interrelations with basement, 79-2742; petrogen, of melt rocks, 79-2743; thermal history of melt sheet, 79-2744; Rb/Sr isochron age, 79-2745; central magnetic anomaly, 79-2746; gravity study, 79-2747; Mont. Laurier-Cabonga area, radioactive occurrences in Grenville province, 79-233; Mont St. Bruno, dawsonite occurrences, 79-4106; Mont St. Hilaire, minerals from, 79-3104; donnayite, 79-4116; gaidonnayite, 79-4014; Montreal, dawsonite-fluorite intergrowths, 79-2867; Orford, chromite, 79-4009; Rouyn-Noranda area, pillow basalts, 79-464; eruption of Archaean Dalembert tuff, 79-1766; Saint-Malachie, basement in Appalachian orogen, 79-1679; Templeton, brown vesuvianite, 79-3356; Tourelle formation, Ordovician deep-water sandstones, 79-1680; Val d'Or, geochem. anomalies surrounding Louvem copper deposit, 79-434

-, SASKATCHEWAN, lithology tectonometamorphic relationships in Precambrian basement, 79-803; isotopic studies of ore-leads, 79-21; N, uranium deposits, 79-1060 (E.1, 2); S, petrol. of sands in Cretaceous and Palaeocene, 79-3010; Athabasca basin, unconformity-type uranium deposits, 79-1060 (E.6); Hanson Lake mine, geochem. data from volcanic rocks, 79-1482

, YUKON, Aishihik Lake, Snag, and Stewart R. areas, rock geochem., 79-505; Big Fish R. area, satterlyite, new mineral, 79-4123; Blow R., whiteite, 79-770; Bonnet Plume R. dist., mineralized breccias, 79-1190

Cancrinite, Portugal, 79-831; Brazil, 79-1902 Canfieldite, synthetic, X-ray, 79-191

Cannizzarite, modulated structure, 79-3349 (9); Switzerland, 79-4376; Italy, crystal structure, 79-2134

- Carbon, in high-purity alkaline earth oxide single crystals, 79-1313; detn. in silicates using C, H, N elemental analyser, 79-1047; organic, detn. in marine sediments, 79-3216; high-temp. behaviour, 79-312; in glassy rims of pillow basalts, 79-1409; from carbonatites, isotopic comp., 79-1374; Florida, radiocarbon in annual coral rings,
- compounds, oxides, C isotope exchange with methane, 79-2286; carbon monoxide, solubility in silicate melts at high P, 79-3569; in solid state reduction of chromite, 79-2338; carbon dioxide, effect on planetary mantles, 79-2284; CO<sub>2</sub>-H<sub>2</sub> mixtures, oxygen partial pressure, 79-2332; H<sub>2</sub>O-CO<sub>2</sub> two phase mixture, P-T curves, 79-2283; fugacity at high T and high P 79-2285; in mantle melting processes, 79-302; in tholeiitic magma, C isotope fractionation, 79-443; effect on liquidus relations of alkali basalts, 79-3649; xenon in CO<sub>2</sub> well gas, 79-2572; outgassing in CO<sub>2</sub>charged warm springs, 79-2588; role in precipitation of beachrock cements, 79-888; fossil fuel, dissolving calcite, 79-2507; atmospheric, consequences of fossil fuel use, 79-3543; in Y-type molecular seives, 79-380-382; Austria, low partial pressure during regional metamorphism, 79-1831; Hawaii, measurements at Mauna Loa Observatory, 79-1257, 2965 isotopes, <sup>14</sup>C dating, comparison of beta

and ion counting, 79-1937; <sup>14</sup>C concentration in stratosphere, 79-2259; atmospheric <sup>14</sup>C, temporal fluctuations, 79-71 (20); data on formation and migration of methane, 79-1475; isotope effects during hydrocarbon production, 79-1297; fractionation in petroleum-forming processes, 79-1474; in organic matter associated with uranium ores, 79-2464; evolution in natural water systems, 79-2590; fractionation in calcite-depositing spring, 79-2578; in 79-2589; methane-producing bacteria, ratios of marine plankton related to surface water, 79-1452; fractionation by marine phytoplankton, 79-2544; in dissolved and particulate organic carbon in marine environment, 79-2553; in land snail shell carbonate, 79-3789; ratio variations in

Pinus Longaeva, 79-2450; influence of diet on distribution in animals, 79-1435; Greenland, geochem. of sediments, 79-2509; India, in carbonate rocks, 79-1387; Japan, in graphite and calcite, 79-1388

Carbonaceous matter, USSR, in rocks and ores of Sb-Hg deposit, 79-2467; South Africa, in Au- and U-bearing carbon seams, 79-1386

Carbonate formations, Portugal, 79-2997; Arctic Canada, palaeosalinity, 79-1430

nodules, Northern Ireland, from pro-glacial lacustrine deposits, 79-1790

- öoids, South Africa, volcanic accretionary lapilli, 79-1757

rocks, nongravimetric method for detn. of chloride, 79-1048; constituents, textures, cements, porosities, 79-1069; *Italy*, highgrade metamorphic rocks, 79-4314; India, thermoluminescence, 79-1870; China, petrog. and reservoir props., 79-1800; Northwest Territories, breccia beds, depositional model, 79-3009; North Sea, sediments, destructive diagenesis, 79-1788

Carbonates, inhibiting crystallization of Al hydroxide in bauxite, 79-3291; carbonate metasomatism, experimental modelling, 79-3587; stability in K-rich rock model, 79-3657; deep-sea, thickness and 14C age of mixed layer, 79-1786; Yorkshire, chem. of chalk groundwater, 79-2576; Russian SFSR, from scheelite deposit, isotopic comp., 79-3791; Iraq, geochem., 79-2519; Queensland, associated with Permian coals, 79-2521; Canada, carbonate-evaporite cycles, 79-890; Minnesota, Ontario, 79-934; Wyoming, from soils, radiocarbon dates, 79-3181

Carbonatites, calcite-dolomite geothermometry, 79-4102; solubility of sulphur in magmas, 79-2359; carbonatite-ijolite relations and liquid immiscibility, 79-3620; Germany, minerals from, 79-963; USSR, magnetites from, 79-722; isotopic comp. of carbon, 79-1374; Russian SFSR, 79-2929; Malawi, secondary strontianite in, 79-1234; Tanzania, melilite-carbonatite tuffs, 79-2964; Pakistan, 79-840; Brazil, ilmenite and clinohumite from, 79-1626; Fe-Ti oxide

and sulphide minerals, 79-4076 Carbonic systems, phase equilibration, 79-

2304

CARIBBEAN SEA, dissolved organic carbon, 79-2553; buoyant ocean floor and evolution, 79-2988; Cayman Trough, magnetic anomalies and sea-floor spreading, 79-993; Mid-Cayman Rise, distribution of rock types, 79-3139

Carlfriesite, crystal structure, chem., syn-

thesis, 79-1147

Carminite, France, 79-1887

Carpathians v. Europe, Czechoslovakia Carrboydite, crystal structure, 79-2343

Carrollite, copper oxidation state, 79-2858; Zaire, Ni-rich, 79-4094; Japan and Zambia, anal., X-ray, 79-2859

Cassiterite, micro-overgrowths on, 79-131; Cornwall, geochem., 79-2832; Portugal, 79-3469; Poland, heavy mineral suite in cassiterite deposit, 79-1175; Egypt, flotation characteristics, 79-3455; Brazil, epitaxial with wodginite, 79-2833

Catapleitte, a-, Greenland, identity with gaidonnayite, 79-4014

Cathodoluminescence, criteria for reporting results, 79-59; gem materials, 79-1364; natural diamonds, 79-1859; use in sedimentology, 79-58

Cattierite, Zaire, 79-4094

Cayman Trough v. Caribbean Sea

Celadonite, Poland, Fe-, 79-4042; Russian SFSR, anal., 79-2816

Celestine, colouring mechanisms, 79-4340; Avon, 79-1882; Germany, mineralization, 79-2469; Switzerland, 79-1891; mixed crystals with baryte, 79-4100; Michigan, 79-3119; Ohio, crystal structure, 79-1145

Cements, precipitation of beachrock cements, 79-888; high alumina, dehydration kinetics, 79-2347; Portland, formation of clinker phases, 79-3665; New Mexico, microdolomite-rich syntaxial cements, 79-897

CENTRAL AMERICA, andesitic alkaline provinces, 79-1743

Ceramics, crystal structures from TEM, 79-1975; from ancient Egypt, study techniques, 79-3124

Cerianite, Virginia, 79-1741

Cernyite, Manitoba and South Dakota, new mineral, chem., opt., X-ray, 79-4114; South Dakota, crystal structure, 79-3405

Ceruleite, *Bolivia*, chem., 79-398 Ceruleolactite, *Germany*, 79-758

Cerussite, France, 79-1887

Cervantite, neutron diffraction study, 79-184

Chabazite v. zeolite

Chabourneite, crystal structure, 79-3349 (44) CHAD, Lake Chad, peloidal nontronite, 79-110

Chalcanthite, DTA, TG, 79-680; France, 79-1887; Arizona, 79-3114

Chalcedony, Poland, chrysoprase, 79-1360

Chalcocite, crystal structure, 79-3404; Poland, 79-2189, 2850; Greenland, 79-

Chalconatronite, synthetic, crystal structure, 79-3415

Chalcophyllite, France, 79-1887

Chalcopyrite, 79-2460; oxidation, 79-1324; solid solution and exsolution with stannite. 79-1060 (IV.5); recovery of copper from concentrates, 79-2156; Poland, 79-2850; Bulgaria, exsolutions in, 79-739; India, microbiological leaching of concentrates, 79-2165; Pakistan, ore microscopy, 79-740: Greenland, 79-2849; Columbia, 79-232

CHALK, Kent, geochem., origin of chert and clay minerals, 79-2510; pore-water comp. in unsaturated zone, 79-3888; Yorkshire, carbonate chem. of groundwater, 79-2576; Northern Ireland, lithostratigraphy, 79-881; Jamaica, chert-chalk diagenesis, 79-

4280

Charnockites, pressure and temp. of formation, 79-928; USSR, comp. of gas inclusions, 79-2564; Africa, 79-3036; India, 79-929; magnetic survey, 79-4367; Brazil, geochem., 79-1969

Chernovite, characteristics and genesis, anal.,

X-ray, 79-4086

Chert, model for origin in limestone, 79-4249; SE England, in Hythe Beds, 79-1793; Kent, origin in Chalk, 79-2510; South Africa, O isotope geochem., 79-1448; Indonesia, Mesozoic, on crystalline schists, 79-1776; Japan, petrogen., 79-3005; Greenland, metamorphosed, O isotope comp., 79-490; USA, in modern fluvial muds and sands, 79-896; Mn deposits in chert-greenstone complexes, 79-2204; North Carolina, playa origin, 79-1811; Pennsylvania, use to man, 79-984; Jamaica, chert-chalk diagenesis, 79-4280

Chesterite, Vermont, crystal chem. 79-2107 Chevkinite, Norway, in syenite pegmatites, 79-1588

CHILE, petrogen. of ignimbrites, 79-3837; Mesozoic margin floor igneous rocks, 79-3838; south coast, chem. of suspended sediments, 79-479; Andes, unconformities in burial metamorphism, 79-936; geo-chron. of transect, 79-1030; Upper Cainozoic volcanism, 79-1031; Rb/Sr isotopic data for Andean orogen, 79-1032; Antofagasta, Salar, Carcote, hydrochlor-

borite, 79-1138; Chuquicamata, history and mineralogy of Cu deposits, 79-3123; isotopic comp. of waters from El Tatio geothermal field, 79-2574; Sarmiento ophiolite complex, metamorphic petrol., 79-1782; Sarmiento and Tortuga ophiolite complexes, 79-2989; Siglia, organic geochem. of paraffin dirt, 79-496

Chilgardite v. hilgardite

CHINA, chernovite, 79-4086; testibiopalladite, 79-4097; copper deposits, 79-1180; protoliths of Late Archaean metamorphic Fe-bearing formations, 79-3043; occurrence of Yangze old plate, 79-4399; geochem. of amino acids of fossil bones, 79-2522; E, Cainozoic basaltic rocks, 79-458, 1715; S, discrimination of mineralized granites, 79-2461; SW, chrom-pyroaurite, 79-2866; tectonics of mercury ore belt, 79-2196; N, age of Precambrian metamorphic rocks, 79-1955; North China fault block, Cainozoic basalts, 79-3822; North China Plain, terrestrial heat flow, 79-3073; Changjiang valley, zoned country rock of porphyrite iron ore, 79-3798; Chungcheng, warwickite, 79-1141; Guangdong Province, Xishi Is., petrol. of Recent beachrocks, 79-3004; igenous belts in Himalayas and Gandes arc, 79-2938; Jiulong and Yihsien, geocronite, 79-744; *Jixian*, jixianite, new mineral, 79-2880; *Kansu*, genesis and genetic types, 79-1210; Qimen-Shexian region, tectonic environment and deformation of Proterozoic metamorphics, 79-4320; Saima alkaline massif, uranium deposit, 79-1181; Shachia, schachialite, new mineral, 79-1659; Sichuan basin, petrog. of carbonate rocks, 79-1800; Tamayen-Shan, geol. conditions for talc formation, 79-4037; Xizang, dating and division of Himalayan movement, 79-1954; Yalu-Tsangpo R. region, tectonic features, 79-4154; Yangtze R., porphyritetype iron deposit, 79-2212; Yunnan and Szechuan province, orthobrannerite, new mineral, 79-766

Chiolite, Greenland, 79-4371

Chloride, detn. in carbonate rocks, 79-1048; factor mobility of Ni(II), Cu(II), Cd(II) in soil, 79-3323; measurement of concentrations in microsamples, 79-3582

Chlorine, in USGS standard rocks, 79-3898; in silicate geostandards, 79-2642; water-

soluble, in granitic rocks, 79-3807

Chlorite, Mössbauer spectra, 79-2014 (1.6); absorption spectra, 79-3380; boron content, 79-3781; Ni-containing, 79-2815; polytypism, 79-3349 (3); in soil, XRD identification, 79-82; Finland and Sweden, 79-2159; England, intergrade mineral in Keuper Marl, 79-2054; Belgium, di/trioctahedral chlorite in quartz veins, chem., X-ray, opt., 79-4039; Italy, 79-1833; alteration products, 79-1090; interstratified (corrensite), 79-103; Switzerland, 79-3095; Poland, Ni-containing, 79-2814; Russian SFSR, 79-901; Turkey, kämmererite, anal., 79-2811; Japan, interstratified chlorite-vermiculite, 79-2014 (1.8); amygdale chlorite (diabantite), anal., opt., 79-4038; Queensland, 79-1846; New Zealand, 79-3047; British Columbia, 79-120; Colorado, in peridotite, 79-3233 (IV.4); Massachusetts, 79-2774; Minnesota, Ontario, iron-, 79934; Peru, 79-2809; Rhode I, intergrowth with cross muscovite, 79-4033

Chloritoid, New Mexico, in quartzite, 79-1857 Chondrodite v. humite

Chromatographic in exchange separation in

silicate rock anal., 79-3213

Chromite, 79-1370; electronic structure, 79-3395; titanian, 79-3233 (III.5); grindability, 79-1980; microhardness, effect on grain size and groundmass, 79-724; Scotland, 79-826; Czechoslovakia, 79-4080; Greece, Os, Ir, Ru contents, 79-1382; Cyprus, deposits in serpentinites, min., chem., 79-1202; PGE content, 79-3788; South Africa, 79-839, 4072; detrital origin, 79-1624; intrinsic oxygen fugacity, 79-269, 727; solid-state reduction, 79-2338; *India*, magnetic —, 79-726; *Pakistan*, geochem., 79-725; New Caledonia, TEM investigation, 79-4332; China, genesis and genetic types of deposits, 79-1210; Quebec, chem., 79-4009; Western Australia, comp. variation, 79-4079; British Columbia, 79-2836

Chromium, partitioning between clinopyroxene and spinel, 79-353; behaviour in laterites, 79-2459; prepn. and certification of ore, 79-3906; South Africa, reference ore

samples, anal., 79-2609

Chrysoberyl, structural morphology, with sinhalite, 79-2092; central Australia, opt., 79-1357

Chrysocolla, DAT, TG, 79-680

Chrysoprase v. chalcedony

Chrysotile, 79-4291; hydrothermal treatment and props. of asbestos, 79-361; Turkey, 79-2811; Vermont, asbestos in ultramafic rocks, 79-3537

Churchite, Alabama, 79-3117

Cinnabar, phase in binary Hg-S, 79-2879

Clasts in deformed rocks, strain ellipsoid, 79-4293

Clay minerals, review, 79-2014; quantitative anal. in sedimentary rocks, 79-3250; in sediments, 79-2014 (3.1); genesis and synthesis, 79-2014 (4.1); recent developments in applied mineralogy, 79-2014 (5.1); X-ray powder diffraction key lines, 79-78; interstratified, one-dimensional scattering of X-rays, 79-2115; anal. with analytical electron microscope, 79-2253; structure and dehydration mechanism, 79-3264; acid-leached, Rb/Sr systematics, 79-2032; regular interstratified 2:1 minerals, "layer charge", 79-3267; effect of moisture on ethylene glycol retention, 79-1084; structures and chem. of soil clay minerals, 79-1059 (2); in Cenomanian littoral deposits, 79-2014 (3.6); in argillite, 79-3300; retention of phenolic acids, 79-3290; catalysis and petroleum generation, 79-3236 (8); stability from soil soln. comp., 79-3281; formation in DSDP Leg 34 basalt, 79-1093; altered glass as possible source on Mars, 79-2660; Devon, in Crackington formation shales, 79-2062; Kent, origin in Chalk, 79-2510; Germany, at basalt-saliniferous deposit contacts, 79-106; facies in Tertiary sediments, 79-105; Czechoslovakia, in sediments, 79-3301; North Atlantic Ocean, indicators of Cainozoic evolution, 79-2104 (3.4); India, in shelf sediments, 79-1096; in tropical soil toposequences, 79-114; Japan, in collapsed cliff, 79-2060; in loam, 79-2072; in andosols, 79-2075; Taiwan, forClay minerals (contd.)

mation of, 79-2067; Hawaii, hydrothermal origin, 79-2014 (4.4); British Columbia, in Valley Copper porphyry deposit, 79-120; Shelf. Mesozoic-Cainozoic Labrador sequences, 79-119; USA, facies of Potomac Group, 79-1092; Long Island Sound, indicators of sediment source, 79-2063; California, related to slope stability, 79-2066; Montana, in soils from volcanic parent materials, 79-3311; Texas, 79-3312

Clays, international conference, 1978, 79-2014; reference samples as archaeological standard, 79-2628; dynamics of clay-water systems from neutron scattering, 79-2014 (2.2); protonation of bases in clay suspensions, 79-2014 (2.9); correlation between coal and clay diagenesis, 79-2014 (3.2); genesis and synthesis, 79-2014 (4.1); flint-, structural, textural, chem. features, 79-2058; flint-clay facies, 79-2059; clay-lead sorption ratios, 79-1246; X-ray identifi-cation in thin section, 79-79; regional appraisal of resources, 79-2014 (5.2); sorption props., 79-2014 (5.4); interaction with anionic polyelectrolytes, 79-2014 (5.5); clay-water systems, neutron diffraction, 79-3266; min. and geochem. transformation during burial diagenesis, 79-2014 (3.3); flocculation of suspensions, 79-3269; detn. with nickel (II) amine complexes, 79-2020; surface reactions of parathion, 79-3251; tropical, 950°C kaolinite exotherm, 79-3284; England, origin, 79-101; weathering profile, 79-3306; stratigraphy of Wealden Beds, 79-1791, 1792; *Ireland*, stepheating of concentrates, 79-1946; France, deposits, 79-2163; IR, ESR study, 79-1077; Portugal, geol. of coastal plain, 79-2079; mineralogy, 79-2080; phys. props., 79-2081; NE Bavaria, petrog., min., geochem., 79-1094; Poland, mineralogy of colloidal fractions, 79-1089; lithology, min., phys., props., 79-2084; mineral comp. and ceramic props., 79-2085; acid activation, 79-3285; Egypt, min. geochem., 79-3309; India, refractory clays, 79-3535; Pakistan, mechanical anal. 79-111; petrog., chem., min., 79-112; min., geochem., 79-1238; central Pacific, brown —, 79-2078; Hawaii, hydrothermal origin, 79-2014 (4.4); Malaya, in weathered granite, 79-115; USA, in Pierre Shale, 79-3302; Texas, diagenesis in Wilcox sandstones, 79-3310; Mexico, deposits, 79-2014 (5.6)

Cliachite, 79-2014 (6.1)

Climate, mankind's influence on, 79-3236 (4); response to astronomical forcing, 79-2455

Clinohedrite, New Jersey, crystal structure, 79-2094

Clinojimthomsonite, Vermont, crystal chem., 79-2017

Clinoptilolite v. zeolite

Clinopyoxene v. pyroxene

Clinopyroxenite, Scotland, aluminous, 79-4181; Colorado, transition to chlorite eclogite, 79-3233 (IV.5)

Clinozoisite v. epidote

Clintonite v. mica

Closure correlation, algebraic explanation, 79-4129; effect of principal component transformation, 79-4130

Coal, hydroxyl contents, 79-3858; correlation with clay diagenesis, 79-2014 (3.2); Aus-

tralia, bituminous mineral matter in, 79-1801: Queensland, geochem. of associated carbonates, 79-2521; New Zealand, mineral matter in, 79-3008; forms of sulphur in, 79-1998: Antarctica, coal-forming elements in permineralized peat, 79-889; Ontario, coal deposits, 79-235; Illinois, potentially volatile trace elements in, 79-1439; Ohio, kaolinite in pyrite framboids, 79-1807; Tennessee, mining affecting fluvial system, 79-476; Wyoming, trace elements distribution, 79-3859

Cobalt, diffusion in basalt melt, 79-1294; distribution between diopside and coexisting melt, 79-2380, 2381; partitioning between diopside and silicate liquids, 79-1283; behaviour in laterites, 79-2459; adsorption by Mn and Fe oxides in soils and

sediments. 79-2255

compounds, Co-CoO system, oxygen chem. potential, 79-2344; buffer assemblage, oxygen fugacity, 79-3568; CoAl<sub>2</sub>O<sub>4</sub>, electron density distribution, 79-3398; y Co<sub>2</sub>SiO<sub>4</sub>, electron density distribution, 79-138; Co<sub>2</sub>[OH/AsO<sub>4</sub>], crystal structure,

Cobaltite, transition metal bonding, 79-3402; Pennsylvania, chem., X-ray, 79-745; 977

Cobaltocalcite, Morocco, 79-3099

Cochromite, South Africa, new spinel group mineral, anal., opt., X-ray, 79-2875

Coesite, molecular orbital study, 79-3390; coesite-quartz transition, comparative friction measurements, 79-3566

Coexisting minerals, estimate of relative selectivity, 79-2265

Coffinite, replacing uraninite, 79-1384; Utah, 79-3501

Coke, reference samples, 79-2625

Collinsite, South Australia, zincian, 79-3102

Colloid systems, geochem., book, 79-2018; colloidal plasmas in space, temp. of solid particles, 79-532

COLOMBIA, corundum colour change, 79-388; Choco, Pt-Fe alloys, 79-2831; Muzo, inclusions in emerald, 79-384; San Andres I, dolomitization by spray-zone brine seepage, 79-4281

Coloradoite, Russian SFSR, in pyritiferous ore, anal., 79-2857

Colorimetry, of gemstones, 79-1365

Colour, in minerals, 79-1864

Columbite, 79-1370; overgrowths on cassiterite, 79-131

Gomendite, Peru, 79-1744

Complex equilibria, shorthand equilibria, 79-2333

Compression, hydrostatic, iron compounds, 79-1862; synthetic garnets, 79-1863; compressional velocity in Franciscan rocks, 79-1871

Computer methods in geology, book, 79-3241 Conglomerates, USSR, recent weathered crust, 79-2069; pyrite mineralization, 79-2193; India, petrochem. and geol. implications, 79-885; Taiwan, in Lichi mélange, 79-870

CONGO, metamorphic rocks and ore deposits, 79-2905

Conichalcite, France, 79-1887

Connellite, Austria, 79-3096; Greenland, 79-4098

Constant rejection law, 79-1290

Contact metasomatic ore deposits, 79-3462

Continental crust, role of fluids in formation and development, 79-772; structural and chem. constraints, 79-2444

plates, relation between P-wave travel time residuals and age, 79-4361

Cooperite, South Africa, chem., X-ray, 79-

Copper, freezing point as radiation pyrometry standard, 79-2282; colorimetric detn. in drill sludge samples, 79-1050; recovery from chalcopyrite concentrate, 79-2156; in soil fractions, 79-3325; Atlantic Ocean, distribution of dissolved Cu, 79-2595

- compounds, Cu<sub>2</sub>Me<sup>II</sup>Me<sup>IV</sup>Me<sup>VI</sup> pounds, structures and props., 79-189, Cu<sub>3</sub>Au crystal structure, 79-177; Cu<sub>4</sub>SnS<sub>4</sub>, crystal structure, 79-190; Cu2-Mo3S4, single crystal studies, 79-194; CuO structure type compared with PtS and NaCl, 79-3397; oxygen chem. potential in Cu-Cu<sub>2</sub>O system, 79-2344; CuBr, Debye-Waller factors, 79-1129; Cu<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>, crystal

structure, 79-213

- deposits, worldwide comparison of Cu and Zn abundances, 79-3444; mining and management, book, 79-1063; stratiform, gitological aspects, 79-1184; evidence for post-sedimentary origin, 79-219; porphyry, fluid inclusion petrol., 79-3500; France, 79-2163, 3801; Poland, 79-222; volcanogenic Cu-Zn Czechoslovakia, deposit, 79-1200; USSR, zoning of Cu-Ni deposit mineralization, 79-3519; Iran, 79-2458; Zambia, deformed porphyry-type, 79-1207; *India*, oxidized zone, 79-1178; *Burma*, 79-2185, 2186; *Japan*, 79-1182; Oueensland, porphyry-type Cu-Mo deposits, 79-1185, 1217; cupreous pyrite volcanogenic massive sulphide deposit, 79-1219; Greenland, geochem. prospecting, 79-2602; British Columbia, Cu-Mo porphyry, sulphide zones and hydrothermal biotite alteration, 79-232; Quebec, geochem. anomalies, 79-434; USA, potential of Cu-Mo porphyry deposits, 79-3496; Arizona, Cu porphyry deposit, 79-70 (5); Washington, Cu porphyry deposit, 79-1224, 2203; Chile, 79-3123

mineralization, Queensland, 79-1220; Northwest Territories, 79-2202; Texas, facies control of red-bed mineralizations

minerals, suspended in ocean waters, 79-2240; Red Sea, amorphous sulphides in metalliferous sediments, 79-2191

, native, Greenland, 79-4098; Pennsylvania,

ores, oxidized, leaching process, 79-3460; Cu-Ni ores, relationship between mineral and chem. comp., 79-2460

Coppite v. tetrahedrite

Coprolites, Nebraska, Wyoming, XRD and XRF anal., 79-3860

Coral, skeletons, Sr/Ca thermometry, 79-3841; Pacific Ocean, alpha emitters in, 79-3555, 3556

Cordierite, absorption spectra, 79-3380; water content, 79-346; thermodynamics of water in, 79-3708; hydrous Mg- and Fe-, crystal chem., 79-3709; reaction with olivine, 79-3710; cordierite-garnet equilibrium, 79-347, 348; indialite polymorph, 79-2101; Russian SFSR, 79-902, 3042; South Africa, in granulites, 79-2158 (10); contact metaCordierite (contd.)

morphism product, 79-3037; Madagascar, hydrous gem magnesian -, opt., anal., 79-1593; Queensland, 79-1846; British Columbia, formed from garnet, 79-2756; Massachusetts, 79-3108

Core formation, Sr and Pb isotope geochem.

constraints, 79-2494

Cornubite, France, 79-1887 Corrensite, Italy, 79-103

Corundum, synthesis by flux method, 79-316; lattice dynamics, 79-173; high-temp. heat capacity, 79-3558; stability of phlogopite with, 79-359; IR detn. in grinding wheel dust, 79-2258; a-corundum, enthalpy at high-temps., 79-315; least-squares refinement, 79-3349 (14); Colombia, colourchange variety, opt., 79-388

-, ruby, fluorescence spectrum calibration, 79-3573; Tanzania, 79-1368; India, 79-3118; opt., 79-2427; Greenland, 79-2428

-, sapphire, origin of colour, 79-1622; IR spectra, 79-3058; Mozambique, 79-1367; Queensland, econ. geol. of mining area, 79-2430; in gem gravels, 79-2429

Covelline, copper oxidation state, 79-2858; Poland, 79-2189; Greenland, 79-4098

Crandallite, France, 79-3088

Cristobalite, quantitative X-ray estimation, 79-3349 (75); molecular orbital study, 79-3390

Critical constants of elements and refractory materials, 79-2270

Crossite v. amphibole

Crust v. continental, oceanic crust

Cryolite, Greenland, 79-4371

Cryptoperthite v. feldspar

Crystal chemistry, Si-O bonds at high P, 79-1270; classification of silicate structures, 79-1102; titanian chondrodite and titanian clinohumite, 79-1106; hydrous Mgand Fe-cordierites, 79-3709; djerfisherite and pentlandite, 79-3349 (50); gmelinite, jimthompsonite, 79-707; clinojimthompsonite, chesterite, 79-2107; kornerupine, 79-3361; latiumite, 79-4058; micas, 79-2109; sapphirine, 79-4025; sherwoodite, 79-1144; stilbites and stellerites, 79-708; thenardite-type compounds, 79-2136; zircon and scheelite, 79-3341; Si-rich barium silicates, 79-3349 (27); condensed phosphates, 79-3349 (35); MgSiO<sub>3</sub>, 79-350; Ti<sub>2</sub>O<sub>3</sub>, 79-180

growth, for magnetic applications, book, 79-1066; development of theory, 79-3565; growth history by X-ray diffraction topography, 79-3342; from solution, 79-3564; in hydrothermal solutions, 79-3562: behaviour of solution around growing crystal, 79-3563; growth rates in silicate systems, 79-2318; corundum, 79-316; epsomite, 79-2357; Y-Fe garnet, 79-1066 (1); Gd-Ga garnet, 79-1066 (2); magnetic spinel crystals, 79-1066 (5); sodalite, 79-3349 (57); aluminium nitride, 79-2350;

Ca<sub>2</sub>SiO<sub>4</sub>, 79-3349 (55)

structures, data for inorganic compounds, book, 79-75; least-squares procedure, 79-3343; equivalent of magnetic groups, 79-3333; classification of crystal point symmetries, 79-133; molecular and crystal structure models, 79-1072; calculation of site potentials with Madelung method, 79-2088; morphological complements, 79-

3332; symmetry operations and simplified matrix notation, 79-3338, 3339; matrix representation of space group operations, 79-3334; lattice parameters from rotation and Weissenberg photographs, 79-3349 (22); triclinic cell parameters from Weissenberg photographs 79-1100; lattice parameter measurement by multiple X-ray diffraction, 79-3349 (23); structure factor residuals, 79-128; theory of reticular structure, 79-3331; modulated superstructures, 79-3349 (11); bond lengths in inorganic crystals, 79-130; distortions in  $MX_4$  molecules, 79-3347, 3348; inorganic cubic structure types, 79-3349 (28); O-H vs. O ... O distance correlation, 79-3345; probable lithium sites, 79-1101; neutron scattering of solution-grown polymer crystals, 79-3344; related to compressibility in oxides and silicates, 79-3591; adamite, 79-2138; agrellite, 79-3349 (47); albite, 3388; high albite, 79-2116; anglesite, 79-1145; apatite, 79-3422; armstrongite, 79-3370; arthurite, 79-2139; artinite, 79-203; baratovite, 79-3362; baryte, 79-1145, 3412; bicchulite, 79-1108; bombiccite, 79-3431; Li boracites, 79-196; brewsterite, 79-171; bytownite, 79-2119; canfieldite and argyrodite, 79-191; cannizzarite, 79-2134; carlfriesite, 79-1147; celestine, 79-1145;  $\alpha$ -celsian, 79-2120; cervantite, 79-184; chabourneite and pierrottite, 79-3349 (44); chalconatronite, 79-3415; hydroxyl-chondrodite, 79-142; clinohedrite, 79-2094; clinoptilolite, 79-172; digenite, 79-2133; dioptase, 79-2102; djurleite and low chalcocite, 79-3404; domeykite, 79-195: dumortierite, 79-146; calcium-containing elpidite, 79-1110; emeleusite, 79-3375; ordered synthetic feldspars, 79-1117; freudenbergite, 79-1132; ganophyllite, 79-157; garnet, 79-3349 (40); griphite, 79-2141; grossular, 79-940; guildite, 79-202; harkerite, 79-2122; hedenbergite, 79-147; hemimorphite, 79-3355; hilgardite, 79-2129, 3418; hopeite, 79-3423; huttonite and thorite, 79-3354; hyalophane, 79-163; hydrochlorborite, 79-1138; hydromagnesite, 79-204; indialite, 79-2101; inesite, 79-1107; jimboite, 79-3419; keldyshite, 79-2104; kornerupine, 79-1336; köttigite, 79-3428; ktenasite, 79-2131; Mn-kurchatovite, 79-2128; labuntsovite, 79-3349 (49); langbeinite, 79-3413; synthetic lautarite, 79-1130; leucosphenite, 79-2120; libethenite, 79-2138, 3424; likasite, 79-214; lindströmite, 79-3408; lithiophosphatite, 79-3426; lomonosovite, 79-2144; magnussonite, 79-3417; malachite, 79-205; magnesian manganhumite, 79-1104; merlinoite, 79-2121; microcline, 79-3387; milarite, 79-2120; monetite, 79-208; nifontovite, 79-2130; olivenite, 79-193; synthetic ortho-pyroxenes, 79-3366; 3T paragonite, 79-1112; paramelaconite, 79-1131; pectolite, 79-3371; petzite, 79-3411; tetraferriphlogopite, 79-1113; orthopinakiolite, 79-3420; pyrochlore, 79-1133; pyrope, 79-940; high-Ca monoclinic pyroxenes, 79-2105; low-quartz, 79-134; α-quartz, 79-2416; rankinite, 79-2100; roselite, 79-2140; sakhaite, 79-2122; sanidine, 79-2116; sapphirine, 79-3374; semenovite, 79-3384; sepiolite, 79-2113; shandite, 79-192; stenhuggarite, 79-186; stilpnomelane, 79-692; syngenite, 79-2137; taeniolite, 79-2112; tienshanite, 79-2103; low tridymite, 79-168, 1118; triphylite, 79-2143; tuhualite, 79-2120; warwickite, 79-1141; willemite, 79-2093; Na X-zeolite, 79-3349 (41); zircon, 79-3353; DIP-trypsin, 79-129; humic acids, 79-3346;  $\beta$ -alumina, 79-174; aluminium orthoborate, 79-198; synthetic feldspar BaAl, Ge2O8, 79-164; BaFI, BaFBr, CaFCl, 74-216; bismuth tellurides, 79-2135; bismuth oxides, 79-2124, 2125; (34); 2128;  $Ca(NO_3)_2.4H_2O$ , 79-200;  $\beta$ -dicalcium silicate, 79-153; a-Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>, 79-209; Ca<sub>2</sub>HPO<sub>4</sub>SO<sub>4</sub>.4H<sub>2</sub>O, 79-1146; cadmium 'apatites', 79-211, 212; Cs<sub>2</sub>PtCl<sub>4</sub>, 79-3416;  $Cu_4SnS_4$ , 79-190;  $Cu(PO_4)_2$ , 79-213;  $\beta$ -FeOOH, 79-2132;  $\alpha$ -gal-79-213; β-FeOOH, 79-2132; α-gal-lium oxide deuteriohydroxide, 79-187; K-[TiO(C,O,)-1,2-25] H<sub>2</sub>O, 79-3430; Li<sub>2</sub>SiO<sub>3</sub>, 79-154; Li<sub>4</sub>SiO<sub>4</sub>, 79-3349 (38); synthetic LiScSiO<sub>4</sub> olivine, 79-2091; LiScSi<sub>2</sub>O<sub>6</sub>, 79-2106; lithium formate monohydrate, 79-132; MgGeO<sub>3</sub> (ilmenite-type), 79-3660; Mg<sub>2</sub>GeO<sub>4</sub> spinel, 79-176; MgSiO<sub>3</sub>, 79-350; MgMoO<sub>4</sub>.5H<sub>2</sub>O, 79-206; MgKPO<sub>4</sub>.6H<sub>2</sub>O, struvite analogue, 79-2142; (NH<sub>4</sub>)<sub>3</sub>H(SO<sub>4</sub>)<sub>2</sub>, 79-3414; sodium pentaborate monohydrate, 79-197;  $NaB_5O_6(OH)_4$ , 79-1140;  $Na_2[B_4O_6(OH)_2]$ , 79-3421; Na<sub>2</sub>ZnSi<sub>3</sub>O<sub>8</sub>, 79-165; Na<sub>2</sub>Zn[Si<sub>3</sub>O<sub>8</sub>], 79-2123; Na<sub>2</sub>HPO<sub>4</sub>.2H<sub>2</sub>O, 79-207;  $Na_2(Fe_{0.3}^{3+}Fe_{0.5}^{2+})_2Fe^{2+}[PO_4]_3$ , synth. alluaudite variety, 79-2145;  $4Nb_2O_5$ .9WO<sub>3</sub>, 79-1139; 4Nb<sub>2</sub>O<sub>5</sub>.22WO<sub>3</sub>, 4Nb<sub>2</sub>O<sub>5</sub>.50WO<sub>3</sub>, 79-1137;  $Pb_3(PO_4)_2$ , 79-2146; mixed Rb, K, Nb, Ta oxides, 79-1134, 1135;  $\alpha$ -Sb<sub>2</sub>O<sub>4</sub>, 79-184; Se<sub>2</sub>S<sub>5</sub>, 79-3410; TiSi<sub>2</sub>, 79-183; Zn-Li silicates, 79-2095

Crystals, patterns in, book, 79-3238

Crystallography. International Tables, 79-3349 (1); course for geology students, 79-1097; crystallographic groups of 4-D space, 79-2008; point groups, rod groups, layer groups, 79-2087; morphology and equilibrium forms of a crystal, 79-3336; application of Hartman and Perdok theory, 79-3337

CUBA, zeolitic rocks, 79-935; Sierra del Rosario Mts., bauxite deposit, 79-2238

Cubanite, 79-2460; Bulgaria, exsolution in chalcopyrite, 79-739

Cuprite, optical constants by ellipsometric method, 79-1861; Cu oxidation state, 79-2858; Poland, 79-2189; Greenland, 79-4098; Alabama, 79-3117

Cuprostibite, Greenland, 79-4098

Curie isotherms, mineralogical constraints, 79-3082

Cuspidine, Japan, anal., opt., 79-2784

France, 79-1887; Cyanotrichite, Massachusetts, carbonate, 79-3108

Cyclotomic sets, interpoint distances, 79-3330 Cymrite, thermal conversion into barium

feldspar, 79-2411

CYPRUS, volcanicity, 79-69 (13); evolution of fracture zone, 79-3136; origin of ophiolitic sulphide ore deposits, 79-1176; Limassol Forest, podiform chromite deposits, 79-1202; Troodos ophiolite complex, 79-1770, 2977; Ir, Os, Pd distribution, CYPRUS (contd.)

79-2481; Pt metals in rock-forming minerals, 79-3788; metallogenesis along fossil oceanic fracture zone, 79-1203; Troodos magmatic formation and Mamonia nappes compared, 79-1773

Cyrtolite, Canada, 79-233

CZECHOSLOVAKIA, Bohemia, accessory nigerite in granite, 79-2841; staurolite, 79-2773; genesis of aplite in Ricany massif, 79-3019; Bukov ore deposit, sabatierite, new mineral, 79-2890; West Carpathian ultramafic rocks, B distribution, 79-3810; Dubnik, opal deposits, 79-2224; organic minerals accompanying mercury mineralization, 79-4068; Gemer province, Sn-W-Mo ore-bearing granitoids, 79-1070 (III.2); Hodkovce, chrome spinels and pentlandite from ultrabasic body, 79-4080; Karlovy Vary, kaolinite crystallinity index, 79-2014 (7.4); Krušné hory, development, tectonics and structure, 79-1070 (I.6); tin-bearing granites, 79-1070 (II.5, III.14); geothermometry of minerals from tin deposits, 79-1070 (IV.2); Libušín, rostite, new mineral, 79-4122; Malé Karpaty Mts., accessory minerals in granites and pegmatites, 79-4187; Obrazek Cu-Zn ore deposit, 79-1200; pegmatites in Planá pluton, 79-833; Rudňany deposit, tetrahedrite, 79-4336; Slovakia, Cu, Pb, Zn, Ag geochem. in neovolcanics, 79-3812; central Slovakia, dating neovolcanic rocks, 79-3156; middle Slovakia, accessory minerals of Veporide crystalline rocks, 79-4143; of magmatic and metamorphic rocks, 79-4144; eastern Slovakia, chronology of volcanic events, 79-3157; clay minerals in sediments, 79-3301; Spišsko-gemerské Rudohorie Mts., Alpine metamorphism and siderite ore formation, 79-4303; tin-bearing granites, 79-1070 (III.14); aikinite and xenotime, 79-4375; Tatrides, K-feldspars from pegmatites, 79-4048; min. and petrog. of pegmatites, 79-4188

Dacites, origin, 79-296; mineralogy, chem., 79-3231 (2); Lesser Antilles, 79-3231 (21); Pacific Ocean, low-K<sub>2</sub>O, 79-3231 (20, 22)

Daomanite, China, new mineral, 79-1645; anal., opt., X-ray, 79-1649

Darapskite, crystal structure, 79-75

Data-base information retrieval system in Diaspore, structure, 79-187; detn. of Fe and min.-geochem. studies, 79-61

Datolite, proton coordination, 79-3349 (51)

Davy, Sir Humphry, unpublished lectures, Dickite, detn. in kaolins by dilatometry, 79-1905

Dawsonite, Quebec, intergrowth with fluorite, 79-2867; contrasting occurrences, 79-4106 Dayingite, China, new mineral, 79-1645

DEAD SEA, Li recovery from brines, 79-1237; tetrapyrroles in asphalts, 79-2542

Debye-Waller factors, KBr, 79-1128; CuBr, 79-1129

Decrepitation, rate determination minerals, 79-1041

Deerite, preferred orientation and X-ray powder pattern, 79-679; from blueschist-facies rocks, 79-2800

Deformation-induced recrystallization minerals, 79-3594

DENMARK, mineral deposits, 79-3232 (5); Eastern Jutland, B, Li, Rb in Quaternary sediments, 79-1095

Density current structure and magmatic sedimentation, 79-3589

Desautelsite, California and Pennsylvania, new mineral, chem., opt., X-ray, 79-4115

Desert varnish, California, Mn- and Fe-oxide mineralogy, 79-3842

Detrital minerals, photographic atlas, 79-1057

Deweylite, Russian SFSR, 79-901

Diabase v, dolerite

Diamond, ion beam analyses and phys. props., 79-1860; hardness anisotropy, 79-716; refractive index, temp. and pressure variation, 79-715; opt., 79-4329; absorption spectra, annealing, 79-3758; type 1a, secondary absorption edge, 79-3057; laser reflection patterns, 79-3772; characteristics and interpretation, 79-712; new gem diamond pen, 79-3773; synthetic, crystallography and dynamic strength, 79-3760; sources of cathodoluminescence, 79-1859; decay time of N3 luminescence, 79-948; artificially coloured, 79-1348; hydrogen impurity, 79-713; major, minor and trace impurities, 79-714; zonally distributed impurities, 79-57, 4066; inclusions and mineral paragenesis, 79-718; inclusions in, related to Earth's interior, 79-717; etch pits and light figures on surfaces, 79-719; defects in, 79-1621; Compton profiles, X-ray structure factors, band structure, 79-1121; band parameters, 79-3349 (20); X-ray diffraction spikes and impurity segregations, 79-3349 (61); classification of stones, 79-3759; brilliant, relation between proportion and yield, 79-383; round brilliant cut, brilliance and fire, 79-3757; min. and S isotope ratios of associated sulphides, 79-3233 (II.5); in eclogite, 79-3233 (II.1, 3); Sancy, history of stone, 79-1347; history and current mining practice, 79-2426; Botswana, 79-2192; southern Africa, inclusion-bearing, 79-2472; Queensland and New South Wales, in gem gravels, 79-2429; Wyoming and Colorado, in kimberlite diatremes, 79-3541

-anvil cells, impoved beryllium diamond support, 79-2277; improved design, 79-2278

cell and nature of Earth's mantle, 79-3236 (14)

tools in lapidary arts, 79-1367

"Diamond Eye" reflectivity meter compared with "Lustermeter", 79-1350

Mn content, 79-2007 (8); Gibbs free energy of formation, 79-2302; Brazil, 79-1902

79-1074; acid- and base-saturated, Zn reactions, 79-2030; Jamaica, ordered and disordered varieties, 79-1087

Differential reaction analysis of thermally inert substances, 79-245

thermal analysis, of irradiated minerals, 79-1037; carbonate minerals, 79-4103; oil shale, 79-4270; hydrogen-contaminated well cuttings, 79-3198

Diffusion, model for phosphide exsolution, 79-1504; mass transfer in pitted pebble conglomerates, 79-2480; Fe-Mg diffusion in olivine, 79-1501; Sr, Ba, Na in obsidian, 79-1284; Eu, Gd in obsidian and basalt, 79-1286; Ca, Sr, Ba, Co in basalt melt, 79-1294; in homogenization of garnets,

79-2755; oxygen in vitreous-SiO<sub>2</sub> fibres, 79-2315; Ca in silicate melt, 79-3618; self

diffusion in silicate melts, 79-3619; in silicates, 79-3787

Digenite, high-temp., crystal structure, 79-2133; Greenland, 79-4098

Digestion of geol. materials, 79-3896 Dinosaurs, extinction, 79-3236 (7)

Diopside v. pyroxene

refinement, 79-2102; Dioptase, structure DTA, TG, 79-680

Diorite, trace elements in standard rock, 79-2626; albitization of diorite-porphyry, 79-2406; melting relations in quartz diorite-H<sub>2</sub>O-CO<sub>2</sub> system, 79-3653; Norway, orbicular, 79-882; Finland, geochem., 79-451; Saudi Arabia, epidotization, 79-2484; Oregon, quartz-, petrol., geochem., origin, 79-3231 (19)

DIP-trypsin, difference Fourier structure refinement, 79-129

Djerfisherite, synthesis, 79-3672; crystal chem., 79-3349 (50); South Africa, nickesynthesis, 79-3233 (III.9); Queensland, slag occurrence, chem., X-ray, 79-2854; Greenland, 79-2849

Djurleite, crystal structure, 79-3404

Dolerite, diabase dykes, crystal growth and nucleation, 79-2915; Norway, geochem. of dykes, 79-448; Sweden, feldspar indicators of post-magmatic hydrothermal activity, 79-3784; Fe-Ti oxides in, 79-4331; Ireland, Early Caledonian, 79-829; geochem., petrogen., 79-4182; USSR, structure of diabase belt, 79-2931; South Africa, geochem. of Karroo sills, 79-457; Greenland, Canada, Rb/Sr ages, 79-25; Canada, distinct phases of Nipissing and Abitibi diabase intrusion, 79-4369; Northern Territory, Lr. Proterozoic continental tholeitic suite, 79-1718; North Carolina, dykes of eastern Piedmont, 79-1742

crystallization kinetics Dolomite, from aqueous soln., 79-2362; kinetics and thermodynamics of decomposition, 79-334; stability in hydrous mantle, 79-1310; sodium coprecipitation, 79-333; dolomiteankerite series, opt. identification, 79-1971; IR evaluation of Fe and excess Ca, 79-1638; dolomite-calcite geothermometry in carbonatites, 79-4102; boron content, 79-3781; protodolomite redefined, 79-1639; Portugal, chem., 79-2512, 2997; Switzerland, 79-1891; Poland, lattice defects, 79-754; Greece, siliceous metamorphism, 79-1837; Israel, circular and tabular bodies, 79-3002; Egypt, origin and 79-1798; diagenesis, Madagascar, inclusions in cordierite, 79-1593; Japan, 79-2864; Colorado and Utah, 79-1810; Indiana, high-purity, 79-3450; Nevada, diagenetic formation related to Palaeozoic palaeogeography, 79-1809; Brazil, 79-

Dolomitic concretions, Scotland, crustacean burrow origin, 79-1789

Dolomitization, NE England, of Marl slate, 79-1171; Italian Dolomites, 79-1795; Hungary, metasomatic, 79-4282; Arctic Canada, of Lr. Palaeozoic carbonate sequence, 79-1430; Colombia, by sprayzone brine seepage, 79-4281

Domeykite, Michigan, crystal structure refine-

ment, 79-195

 $\beta$ -, reflectivity and microhardness, 79-3065; France, 79-2856

DOMINICAN REPUBLIC, Sr geochron. of tonalitic batholith, 79-469

Donnay-Harker law, validity, 79-3329

Donnayite, Quebec, new mineral, anal., opt., X-ray, 79-4116

Dravite v. tourmaline

Drill, for isolating material from thin and polished sections, 79-1033

Droogmansite, shown to be kasolite, 79-2772 Dufrenite, Germany, 79-758; Alabama, 79-

Duftite, France, 79-1887

Dugganite, Arizona, new mineral, chem., opt., X-ray, 79-1651

Dumortierite, structure anal., 79-146; Zambia, Ti-rich, in borosilicate rock, 79-2780

Dundasite, France, 79-1887

Dunite, standard rock, trace element anal., 79-2623; synthetic, experimental deformation, 79-3605; Chassigny meteorite, cumulate dunite, 79-2728; Sweden, experimental annealing, 79-3596; North Carolina, petrol., 79-4215, 4289; Washington, petrol. and mineral chem., 79-1850

Dykes, Scotland, Permo-Carboniferous dykeswarm, 79-1698; Poland, rocks of granitoid massif, 79-1708; Greenland, Tertiary intrusions, 79-815, 817; Canada; 40 Ar/39 Ar dating, 79-1020; California, dyke swarm, 79-4212; South Carolina, composite geochem., 79-468; Wyoming, mafic, 79-4210

Dysanalyte, Germany, 79-963 Dyscrasite, Greenland, 79-4098

Eakerite, North Carolina, 79-982

EARTH, as part of Universe, 79-71 (1); planetesimal swarm subsequent to formation, 79-526; bulk comp. and origin, 79-537; heat loss, 79-995; tectonics of tidal, convective Earth, 79-998; global sea-level changes and thermal structure, 79-1879; expanding Earth, essay review, 79-1914; Ca isotope fractionation, 79-2452; rifting and volcanism, tectonic implications, 79-2895; atmospheric banding and continental drift, 79-3125; eccentricity of orbit, 79-3128; melting due to primordial dense atmosphere, 79-3778; Earth-Moon system, early history, 79-1485 - sciences, dictionary, 79-1071

Earth's crust, state of stress, 79-71 (18); evolution, 79-408; fluids in, book, 79-1058; evidence for water in lower crust, 79-1877; element distribution during Archaean, 79-2445; implications of correlated Nd and Sr isotopic variations, 79-3803; chem., thermal gradients, evolution of lower continental crust, 79-3868; Italy, history and petrol. of fragment, 79-3034

Eclogites, crustal production in overthrust orogenic zones, 79-3023; Norway, structural, stratigraphic, and petrol. study, 79-784; pods from basal gneisses, 79-906; France, trondhjemitic layers in, 79-3231 (14); Corsica, relics in ophiolite nappe, 79-4315; Germany, age detn., 79-1949; Italy, O and H isotope comp., 79-486; mineral parageneses, 79-1833; minerals from, 79-1834; K, Rb, Cs in Voltri group, 79-2563; Switzerland, petrol. of eclogite-metarodingite suite, 79-4306; Africa, xeno-

liths from kimberlites, 79-4005; Lesotho,

lower-crustal, 79-3233 (II.4); South Africa, diamond-graphite eclogite, 79-3233 (II.1, 3); *Arizona*, inclusions in latite, 79-3233 (IV.1, 2); *Colorado*, in xenolith, 79-3233 (IV.5); Venezuela, garnet zoning and polymetamorphism, 79-2760

Economic mineral deposits, atlas, 79-3235;

World resources, 79-3441

ECUADOR, Andes, Cretaceous to Eocene volcanic arc activity, 79-2958

EGYPT, study of ancient painted ceramics, 79-3124; Aswan, granitic rocks, petrogen. and age, 79-1711; min., geochem. of El Malgata clays, 79-3309; Eastern Desert, petrog. of Gilad Said granitic stock, 79-4195; Gabal Abu Khrug and Gabal El-Nuhud, alkaline rocks, 79-2482; Helwan, impurity-related centres in pale-green calcite, 79-1634; High Dam Lake, mechanical anal, and comp. of sediments, 79-1797; Igla, flotation characteristics of cassiterite, 79-3455; Lake Nasser, geochem. of bottom sediments, 79-2517; Nile Valley, RE in phosphorites, 79-2518; Razzak oil field, Aptian Alamein dolomite, 79-1798; Safaga, pelletal phosphorites, 79-437; eastern Sinai, ultramafic rock in Precambrian, 79-1712

Eh-pH diagrams, application of Oklo natural reactor, 79-1372, 1373

Elbaite v. tourmaline

Elbe R. v. Germany

Elastic constant systematics, 79-1866

Elasticity, andalusite and sillimanite., 79-942; diopside, 79-4345; KMgF<sub>3</sub>, P and T dependence, 79-4338

Electrical conductivity, in upper mantle, 79-1876; deep crust, 79-1877; Green R. oil shale, 79-2169; low and high albite, 79-2403; olivines and pyroxenes, 79-4343

Electron diffraction, Spain, glide elements in pyrite, 79-1124

microscopy, ultrathin mineralogical sections, 79-3201; pyrite, 79-1124; high-temp. oxidation in olivine, 79-2748; adularia, 79-1608; K ion ordering in KSbO<sub>3</sub>, 79-185; anal. of asbestos fibres and clay minerals, 79-2253; radiation damage and microstructure in lunar soils, 79-2678; Pacific Ocean, manganese concretion, 79-426; Hg in Ottawa R. sediments, 79-3548

-, high resolution, trace elements and crystal defects, 79-1098; tetragonal tungsten bronze-type structures, 79-1137; disordered mica structures, 79-1114; 2M,

polytype of sericite, 79-2111

—, scanning, mounting 10 μm particles, 79-46; crystal structures in refractory ceramics, 79-1975; formation of gibbsite from plagioclase, 79-2072; bauxites, 79-2217; morphological features of soil micas, 79-2071; synthetic opal, 79-1354

-, transmission, chromite,

titanomagnetite, 79-4333

paramagnetic resonance, trace metal anal. in marine environments, 79-1247; Maxixetype beryl, 79-2431; plagioclase, 79-161; Fe-rich phases in montmorillonite, 79-1081;

Mn<sup>2+</sup> diffusion in MgO, 79-322 -probe microanalysis, 79-1974; scanning pictures for modal analysis, 79-1973; energy-dispersive, accuracy, precision, detection limits in silicate anal., 79-3222; analysed minerals as standards, 79-2645;

effect of chem. bonding on correction procedure, 79-3223; major element anal. of rocks, 79-54; conversion of X-ray intensities for small particle anal., 79-1982; glassy phase in alumino-silicate refractories, 79-3699; phosphorus in soil, 79-3327, 3328; metalliferous sediment, 79-425

spin resonance, vitrinite macerals, 79-1043; iron oxides on kaolin surface, 79-2052; clays, 79-1077; humic acids, 79-3346 transition metals in humic acid, 79-2561; guide to humification of peat, 79-3316

Electrum, Japan, 79-1182

Elpidite, Ca-bearing, Mongolia, crystal structure, 79-1110

EL SALVADOR, Boqueron volcano, temporal magmatic variation, 79-866

Emeleusite, crystal structure, 79-3375

Emerald v. beryl

Emission spectroscopy, electrode material and design, 79-2013 (1.3); applications to oceanography, 79-2013 (1.6); in biomedical research, 79-2013 (2.3)

Enargite, British Columbia, 79-232

ENGLAND, Wolfson Geochem. Atlas, 79-68; IGS boreholes 1976, 79-791; cluster anal. of chem. data from granites, 79-1398; Palaeozoic granites, zircon U/Pb systematics, 79-1056 (3.6); origin of Keuper Marl and Rhaetic clays, 79-101; oil shale occurrences in Kimmeridge Clay, 79-471; S, weathering profiles of over consolidated clay, 79-3306; SE, fuller's earth occurrences in Lr. Greensand, 79-1231; stratigraphy of Weald Clay, 79-1792; cherts of Hythe Beds, 79-1793; Lower Eocene ash sequence, 79-2961; SW Variscan granites, 79-1699; kaolin, 79-2052; fluid-inclusion data for Pb-Zn ores, 79-1150; NE, dolomitization and mineralization in Marl Slate, 79-1171; records of wells in South London area, 79-4257; The Wash, geol. and geophys. survey, 79-4254; water storage scheme, 79-4255; Midlands, chlorite intergrade mineral in Keuper Marl, 79-2054; S Pennine orefield, sulphide mineralogy and paragenesis, 79-2172; N Pennine orefield, major lineaments, 79-1151; fluid inclusions in fluorite, 79-1152

-, AVON, Almondsbury, disseminated galena in Rhaetic shales, 79-1884; Bath, -, AVON, Combe Hay mine, fuller's earth, 79-792; Yate, iron ore occurrence, 79-1881; minerals from Upper Evaporite horizon, 79-1882 , BERKSHIRE, Sonning and Henley, sand

and gravel resources, 79-2223

-, CORNWALL, hübnerite/ferberite ratio as geothermometer, 79-732; wallrock alteration around granites, 79-1148; megacrystic members of Carnmenellis granite, 79-1700; Halvosso, pegmatites, 79-1701; Lizard, Porthkerris Point, hydrothermal mineralization in amphibolites and granulites, 79-1815; Predonnack Down, borehole, 79-2897; tourmalinized rocks in St. Austell granite, 79-1702; St. Just aureole, discordant calc-silicate bodies, 79-1817; Wheal Owles, triploidite, 79-2869; St. Michael's Mount, fluid-inclusion study of mineralization, 79-3507; topaz-rich greisens, 79-1816; St. Michael's Mount and Cligga Head, cassiterites, 79-2832; West Godolphin mine, Late Carboniferous granite, 79-792.

ENGLAND (contd.)

—, CUMBRIA, hematite, 79-1637; Lake District, Ordovician intrusions, 79-1004; isochron for Stockdale rhyolite, 79-1943; Roughtongill mine, minerals from, 79-3086; Seathwaite Tarn, mineralization, occurrence of wittichenite, 79-2207, 2853

—, DERBYSHIRE, quartz sand grains from Brassington formation, 79-2994; Castleton, colouration in Blue John, 79-3064; Speedwell vent, Carboniferous littoral cone, 79-

1751

- —, DEVON, oxidation state of iron in Littleham Mudstone formation, 78-1419; E, radon in stream waters, 79-1460; tourmalinized rocks from Dartmoor granite, 79-1702; Exeter, clay minerals in Crackington formation shales, 79-2062; Hartland Observatory, magnetic survey, 79-3081; Meldon aplite, envelope rocks in granulite quarries, 79-899; distribution of minerals, 79-3018
- ---, EAST SUSSEX, Hailsham area, boreholes in Wealden Beds, 79-1791
- ---, ESSEX, *Dengie Peninsula*, sand and gravel resources, 79-2220; *Southend-on-Sea*, sand and gravel resources, 79-1232

—, HUMBERSIDE, Givendale, carbonate chem. of groundwater from chalk, 79-2576

—, KENT, Manston, Upper Chalk porewater comp., 79-3888; Pegwell Bay, igneous grains associated with zeolites in Thanet Beds, 79-4219; Ramsgate, geochem. of Santonian chalk, 79-2510

--, LINCOLNSHIRE, Gainsborough, sand and gravel resources, 79-2221

—, MERSEYSIDE, Wirral peninsula, loess from Pleistocene, 79-4253

—, OXFORDSHIRE, Abingdon, sand and gravel resources, 79-3528; Banbury, Withycombe Farm borehole, stratigraphy, 79-1664

—, SHROPSHIRE, Crose Mere, lipids from sediments, 79-2541; Wrekin Buildings borehole, albitized granodiorite, 79-792

—, SOUTH YORKSHIRE, Bawtry, sand and gravel resources, 79-2222; Penistone, mineral distributions in sediments, 79-2014 (3.8)

---, STAFFORDSHIRE, quartz sand grains from Brassington formation, 79-2994

—, SURREY, *Godstone*, montmorillonite-kaolinite association, 79-2014 (3.7)

—, WEST SUSSEX, *Tillington*, fuller's earth deposits, 79-2053

Ensialic basin sedimentation, 79-1056 (3.1) Enstatite v. pyroxene

Epidote, boron content, 79-3781; stability of assemblage epidote-albite-quartz, 79-3707; plagioclase-epidote thermometry, 79-1343; least-squares refinement, 79-3349 (14); fission track annealing characteristics, 79-4012; X-ray detn. of epidote-clinozoisite series, 79-2768; H isotope fractionation with water in epidote-group, 79-3703, 3704; Cornwall, 79-1817; Switzerland, 79-4376, 4378; Italy, 79-1833; Austria, 79-970; Japan, 79-3044; New Zealand, 79-1672; New Brunswick, zoned nodules from sedimentary rocks, 79-905; Massachusetts, 79-2774

---, clinozoisite, activity-composition relationships with pistacite, 79-3706; New Zealand, 79-3047; Northwest Territories, 79-2782; Massachusetts, 79-3108

—, piemontite, Mn-Al —, synthesis and stability relations, 79-3701; *Pennsylvania*, 79-978

-, zoisite, reaction with quartz and kyanite, 79-3705; *Tanzania*, blue-green variety, 79-1592

Epsomite, solution and crystal face growth rates, 79-2357; alteration with seasons, 79-750

Eremeyevite, biaxiality, 79-938

Erionite r. zeolite

Erythrite, Morocco, 79-3099

Eskolaite, electronic-structure, 79-3395; Guyana, 79-4081

ETHIOPIA, melting studies of volcanic rocks, 79-3647; Afar, 79-71 (8); Dallol, hot spring waters, 79-3885; Assab, Fe/Mg distribution in olivine, 79-4004; pyroxenes and element partitioning in spinel peridotite xenoliths, 79-2483; Fantale, viscosity of pantellerite melt, 79-2316; Shungura formation, authigenic mitridatite, 79-4107; Sidamo, nickeliferous serpentinites, 79-

Euclase, Rhodesia, opt., 79-1352

Eucryptite,  $\beta$ -, temp. dependence of crystal structure, 79-3349 (72)

1206; Yubdo, Pt-Fe alloys, 79-2831

Eudialyte, synthesis and stability, 79-3752; natural and synthetic, thermal expansion, 79-4353

Europium, AAS detn. in phosphoric acid and *RE* oxides, 79-1994; diffusion in basalt and obsidian, 79-1286; Eu<sup>2+</sup>/Eu<sup>3+</sup> in silicate melts and crystals, 79-3632

melts and crystals, 79-3632 Euxenite, *Norway*, 79-823; *Bulgaria*, anal., 79-733; *Malagasy Repb.*, data for am-

pangabéite, 79-2840

EUROPE, Pleistocene land-sea correlations, 79-1422; origin of Triassic clay assemblages, 79-101; sedimentary zeolites, 79-1620; iron ore deposits, book, 79-2019; Phanerozoic uranium deposits, 79-1060 (C.3); supply of raw materials, financing of mining operations, 79-3452; trace elements in ultramafic nodules, 79-3233 (V.3); NW, mineral deposits, book, 79-3232; early Palaeogene ash-series, stratigraphy, 79-4138; Carpathians, ferdisilicite, 79-720; West Carpathians, geochem. of alpine-type ultramafic rocks, 79-3813; spinel-group minerals, in ultrabasic rocks, 79-4082; Carpathian basin, Tertiary and Quaternary magma chamber depths, 79-4189

Evansite, Austria, 79-3097

Evaporites, as precursors of massif anorthosite, 79-1375, 2566; relative humidity control of primary mineral facies, 79-2508; France, element ratios in hypersaline inclusions, 79-3785; Germany, degradation products of organic matter in, 79-1456; Spain, source of sulphur, 79-3856; Michigan basin, sedimentology and depositional environments, 79-4271; Kentucky, Tennessee, silicification history, 79-4276

Factor loadings, effect of rotation on stability, 79-4131

Fairfieldite, Germany, 79-3090

Fatty acids, diagenesis in estuarine and coastal sediments, 79-3864; in lacustrine sediments, 79-2559; in diatomaceous ooze, 79-1436; sorption by gypsum, 79-2548

Fault gouges, microstructures and rheology, 79-3598

Fayalite v. olivine

Federovskité, USSR, transformation in borate ores, anal., 79-735

Feldspars, simultaneous melt crystallization, 79-367; structures of glasses, 79-2117; structural classification, 79-1115; thermoluminescence, 79-60; reference sample as archaeològical standard, 79-2628; lattice deformations, 79-160; PI-II phase transition, 79-3349 (65); X-ray study to 550°C, 79-3346 (66); ternary, kinetics and equilibria at 800°C, 79-2399; 39Ar/40Ar response to tectonic events, 79-1950; chem. removal from quartz-bearing rocks, 79-3197; alteration during microbial formation of basic ferric sulphates, 79-360; interaction with aqueous solutions, 79-2033; detn. in mudrocks using XRD, 79-1981; Ba- and Rbcontaining, 79-2823; triclinic, angular relations and representation of series, 79-1610; synthetic BaAl<sub>2</sub>Ge<sub>2</sub>O<sub>8</sub>, crystal structure, 79-164; synthetic SrGa<sub>2</sub>Si<sub>2</sub>O<sub>8</sub>, BaGa<sub>2</sub>Si<sub>2</sub>O<sub>8</sub>, BaGa<sub>2</sub>Ge<sub>2</sub>O<sub>8</sub>, crystal structures, 79-1117; from Scottish Caledonian granites, Pb isotopic comp., 79-3152; France, 79-2163; deformation microstructures, 79-4049; Russian SFSR, from granulite- and amphibolite-facies rocks, 79-2825; India, from gneissic rocks, X-ray, opt., 79-4052; Malaya, alteration in weathered granite, 79-115; Greenland, 79-818; USA, in modern fluvial muds and sands, 79-896; Colorado and Utah, 79-1810; Maine, in granitic rocks, hydrothermal alteration, 79-2499; Montana, weathering products within microcracks, 79-4044; New York, 79-2785

—, adularia, opt., 79-37; sector structure, 79-1608; *Greece*, opt. and structural props., 70,608

79-69

, albite, opt., 79-37; stability, 79-3707; alkali and alkaline earth element partitioning, 79-368; diopside-anorthite-albite system, 79-352 2379; ordering behaviour in aqueous soln., 79-2405; in aqueous soln., Si, Al ordering, 79-3746; albitization of diorite-porphyrite, 79-2406; structures of high-albite, monalbite, and analbite, 79-3388; low- and high-, electrical conductivity, 79-2403; synthetic intermediate-, extinction angles, 79-701; viscosity and structural changes in melt at high pressures, 79-1342; Switzerland, 79-3095; India, rims around feldspars, 79-3249 (25); New Zealand, 79-1672; California, chessboardtwinned, 79-4053; New Mexico, high-, crystal structure and comp., 79-2116

-, alkali, hydrothermal synthesis, 79-2401; nucleation and growth from hydrous melts, 79-2402; thermal expansion, 79-4346; normal modes of vibration, 79-1116; structure energies, 79-3386; variation in solvus curves, 79-3748; related to fluids in cooling plutons, 79-4047; phase relationship with nepheline, 79-1345; Al content in tetrahedral sites, 79-3349 (45); Rb, Sr, Ba partition with silicate liquids, 79-1285, 3640; Sweden, Sr isotopes and structural state, 79-3784; New Brunswick, structural state and comp., 79-694; order-disorder

paths, 79-3385

-, amazonite, South Australia, 79-396

—, anorthite, 79-3705; opt., 79-37; structural studies, 79-3349 (19); reactions at high P Feldspars, anorthite (contd.)

and T, 79-3717; high-temp. heat capacity, 79-3558; thermodynamics of melting, 79-3744; diopside-anorthite-albite system, 79-352, 2379; anorthite-åkermanite instability, 79-2409; absence of thermal minimum in anorthite-åkermanite-gehlenite, solid soln. in alkali feldspar, 79-2408; effect on alkali feldspar solvus, 79-3747

-, anorthoclase, phys. conditions of formation, 79-2817

-, antiperthite, Labrador, twinning and exsolution, 79-1612

- -, banalsite, structural classification, 79-1115 , barium, thermal conversion from cymrite, 79-2411
- -, bytownite, Italy, crystal structure, 79-2119
- -, α-celsian, crystal structure, 79-2120
- -, cryptoperthite, kinetics of lamellar coarsening, 79-366

-, hyalophane, low and high-, structure refinement, 79-163; Russian SFSR, 79-902

- -, K-, thermal treatment, 79-306; experimental deformation, 79-3604; neutron activation anal. of RE and trace elements, 79-2622; substitution of Rb, Tl, and Cs in, 79-2400; Ba- and Rb-containing, structural order, 79-3349 (78); Ba/Rb ratio as depth of formation indicator, 79-4046; France, from equigranular granite, 79-2921; Czechoslovakia, from pegmatites, degree of ordering, 79-4048; USSR, effect of Rb and Cs on structural state, 79-696; Japan, from Takakumayama granite, 79-697; New Zealand, 79-1672; USA, from pegmatites, comp. and structure, 79-4045; California, in altered granodiorite, 79-1822; Maine, from two-mica adamellite, 79-1604; Michigan, cement in Jacobsville sandstone, 79-1609
- -, labradorite, exsolution lamellae, ion probe anal., 79-1614; iridescence and lamellar thickness, 79-2818
- -, microcline, thermal expansion, 79-4346; structure of strained intermediate microcline, 79-3387; maximum microcline crystalline solutions, X-ray, 79-365; incongruent weathering, 79-4051; Norway, 79-823; Nigeria, sector-zoned megacrysts, crystallization history, 79-1607; Virgina, 79-1741; Brazil, 79-1902

-, moonstone, causes of schillerization, 79-406; perthitic structure, 79-2824

- -, orthoclase, crystal structure, 79-2123; IR detn. in grinding wheel dust, 79-2258; in metamorphic rocks, P<sub>s</sub>-\mu H<sub>2</sub>O diagram, 79-2565; Japan, megacrysts in Yakushima granite, 79-695
- -, paracelsian, structural classification, 79-
- -, peristerite and Böggild intergrowths, elastic energies of exsolution boundaries, 79-4347; Massachusetts, formation in phyllites, 79-1613
- -, plagioclase, optical charts, 79-77; hydrothermal synthesis, 79-2401; superstructure, 79-3349 (10); resorption in ternary feldspar system, 79-2404; dispersion method and rapid probe anal., 79-1611; intermediate -, example of structural resonance, 79-2118; NMR and EPR studies, 79-161; stability with scapolite, 79-2420; Al/Si distribution, 79-3349 (42); thermal treat-

ment, 79-306; partitioning of Pb with volcanic glass, 79-2500; samarium and thulium distribution with liquid, 79-3635; from igneous rocks, constant habit development, 79-4050; buoyancy in basaltic liquids, 79-2410; water in plagioclase melts, 79-3630; plagioclase-epidote thermometry, 79-1343; behaviour of Sm in natural plagioclase/melt system, 79-1274; Mn2+ and Fe3+ luminescence centres, 79-162; incongruent weathering, 79-4051; weathering to gibbsite, 79-2072; weathering to halloysite in volcanic ash, 79-2014 (4.9); crystal-field spectra of Fe<sup>2+</sup> and Fe<sup>3+</sup> in, 79-702; lunar, crystal-field effects, Fe content, 79-519; in lunar breccias, comp. and origin, 79-1515; from lunar basalt, 79-2691; Norway, 79-823; role of water in olivine-plagioclase reaction, 79-821; exsolution lamellae in orthopyroxene, 79-3724; in metadolerite dyke, chem., 79-2764; Scotland, 79-826; zoning as record of petrogen. development, 79-699; France, weathering to beidellite, 79-102; Switzerland, comp. of lamellae, 79-1615; Alps, superstructure variation, 79-3389; Italy, sodic, 79-1833; Mt. Etna, melt inclusions in phenocrysts, 79-2826; USSR, of Ni-bearing basic-ultrabasic intrusions, 79-700; Mid-Atlantic Ridge, 79-4078; Hawaii, nucleation and growth, 79-1764: thermoluminescence, 79-3187; Japan, anal., opt., 79-2796; in granulite, 79-3045; Taiwan in taiwanite, 79-4054; Massachusetts, zoned crystals in phyllites, 79-1613; Virginia, 79-1741

, sandine, entropy of mixing, 79-3745; Na, Rb, Tl distributions with phlogopite, 79-1276; partitioning of Pb with volcanic glass, 79-2500; Rb-, thermal expansion, 79-4346; New Mexico, crystal structure and comp.,

79-2116

Fengluanite, China, new mineral, 79-1645

Ferberite v. wolframite

Ferdisilicite, Carpathians, 79-720

Ferrierite v. zeolite

Ferrites, magnetic, hydrothermal crystallization, 79-1066 (4)

Ferrocarpholite, Mössbauer spectrum of <sup>57</sup>Fe, 79-2108

Ferroelectric-like phenomena in Earth's mantle, 79-1337

Ferromagnetic spherules, airborne, origin,

Ferromanganese concretions, Ontario, 79-

- nodules, mechanism of formation, 79-2154; Pacific Ocean, U and Th series nuclides, 79-424; interaction of SO2 with, 79-2168; New York, factors contributing to formation, 79-1433
- slags, interlaboratory anal., 79-51; spectrometric anal., 79-3218

Ferrotantalite v. tantalite

Fersmanite, chem., X-ray, 79-2753

Fersmite, California, 79-1655

Fibroferrite, Greece, opt., 79-1899

Field-ion-microscopy, of refractory metals and alloys, 79-1976

Fiji v. Pacific Ocean

FINLAND, mineral deposits, 79-3232 (2); shield fractures and ore deposits, 79-2160; Koillismaa geol. survey project, 79-2170; SW, geochem. of gabbro-diorite-tonalite-trondhjemite suite, 79-451; Attu I., FeTi-Al oxide minerals, 79-729; Eurajoki and Kymi areas, Sn, Be, W mineralization, 79-1070 (III.6); Lapland ore deposits, S isotope comp., 79-2171; Orijärvi deposit, metasomatism or metamorphism, 79-2159; marginal border group of *Porttivaara* layered intrusion, 79-819; *Somero*, Mn and Fe precipitate in ground-water discharge, 79-428; Susimäki and Riuttamaa, coronas in olivine gabbros and iron ores, 79-3024; Torniossa, Rantamaa marble, 79-2218; Ukkolanvaara, Ilomantsi, RE in Archaean iron formation, 79-483

Fire-clavs, influence of hydrothermal process on minerals, 79-3280; Scotland, high-

alumina, 79-1228

Fission-track studies, review, 79-3141; assessment of geometry factors, 79-3203; length distributions in thick crystals, 79-3202; etching and annealing in phlogopite, 79-1952; annealing characteristics of epidote, 79-4012; deep-sea sedimentation rates, 79-2004; Sweden, apatite from Precambrian iron ores, 79-3149; Czechoslovakia, neovolcanic rocks, 79-3156; India, uranium in garnets, 79-3166; New South Wales, age of basaltic inclusion in kimberlite, 79-1016; Victoria, Lr. Palaeozoic sandstones, 79-16; granitic rocks, 79-1017; Gulf of Mexico, age of Pliocene volcanic glass, 79-3186

Flotation froths, effect of particles on stability,

79-1985

Fluid inclusion research, book, 79-3247; preparing doubly polished thin sections, 79-40; detn. of dissolved elements in, 79-3227; data from porphyry Cu deposits, 79-3500; in minerals from contact metasomatic ore deposits, 79-3462 (6); in synthetic chlorapatites, 79-3676; in speleotherms, D/H ratios, 79-2456; Norway, in granite, comp. and microthermometry, 79-2917; England, in fluorite, 79-1152; data for Pb–Zn ores from *SW England*, 79-1150; *Cornwall*, study of mineralization, 79-3507; *Portugal*, in quartz from tungsten deposits, 79-2181; Austria, in quartz, 79-3792; China, in porphyrite-type iron deposit, 79-2212; British Columbia, uranium-fluorite deposit, 79-234; California, in gem-bearing granitic pegmatite-aplite dykes, 79-2501; Illinois, in fluorites, 79-420

Fluoborite, synthesis of fluorine end-member, X-ray, 79-3683

Fluorapatite v. apatite

Fluoride hydrates, geometry of O-H ... F hydrogen bonds, 79-1127

Fluorine, detn. in rocks and minerals, 79-1997; detn. in geochem. reference samples, 79-2636, 2641; X-ray estimation in montebrasites, 79-1983; influence on Ca-Fe-Si skarn facies, 79-310; addition to starting materials in system Q-Ab-Or, 79-3581; Japan, in granitic rocks, 79-2487

Fluorite, 79-1370; opt., 79-4329; colour centres, RE ions, origin of colouration, 79-759; solubility in system CaF2-MgCl2-H<sub>2</sub>O<sub>2</sub>, 79 3682; formed by conversion of oolites, 79-1051; *England*, fluid inclusion studies, 79-1152; Derbyshire, colouration in Blue John, 79-3064; France, decrepitation rate, 79-1041; deposits, 79-3529; Spain, deposits, 79-3533; genesis, 79-3531; Germany, deposit, 79-3532; Kenya, trace elements in, 79-421; Western Australia,

Fluorite (contd.)

79-3101; British Columbia, fluid inclusion studies, 79-234; Quebec, dawsonite-fluorite intergrowths, 79-2867; Illinois, fluid inclusions in, 79-420; New York, significance of metamorphic fluorite, 79-2301

Fluormica v. mica

Fly-ashes, from power stations, petrog. and chem. data, 79-2738

Flysch, Poland, biochem. siliceous rocks, 79-4263

Fortran IV programme for anal. of geol. sequences, 79-3199

Fossils, minerals found in, literature survey, 79-876; amino acid racemization dating of bones, 79-3146

Fourmarierite, Norway, 79-823; Switzerland, 79-1890

Fractional crystallization of major elements, 79-268

FRANCE, 19th century crystallography, 79-74; Caledonian orogen, 79-771 (21); veintype uranium deposits, 79-1173; uranium in granites, 79-1478; shallow lakes in alluvial plain, 79-1421; Al dissolved in hot springs, 79-2585; amber and fossils resins, 79-1643; hypersthene chondrite meteorite falls, 79-2726; W, biotite weathering in granites, 79-2014 (4.9); SE, Caledonian events in Variscan massifs, 79-771 (22); Alps, wrench faults, arcuate fold patterns and deformation, 79-989; hematite pseudomorphing siderite, 79-1637; Alsace, Sainte-Marie-aux-Mines, native silver, 79-1886; Armorican massif, volcano-sedimentary mineralization, 79-2180; petrogen. of St. Malo migmatite belt, 79-4299; Basin of Autun, sedimentary variation in clays, 79-1077; discovery of Breton volcano-sedimentary mineralization, 79-2175; Brittany, orthogneiss, mylonite, deformation of granites, 79-4147; Variscan metamor-phism and K/Ar dates, 79-1947; migmatites and associated granites, 79-3031; Belmont Cove, manganese-dioxide con-79-429; cretions, Causses mineralization in carbonated Lias, 79-3466; Chaîne des Puys, ages of Laschamp and Olby lava flows, 79-3155; Charollais and Brionnais, evolution of basement at Mesozoic contact, 79-3450; Comte de Provence, mining in region, 79-1889; Jaudy R., contamination of pillows, 79-1828; Lacq, carbonate sedimentological 79-2511; La Roche-l'Abeille, beidellite crystallization, 79-102; Lorraine, La-Croix-aux-Mines, history of silver mining, 79-3509; Massif Central, leucogranites, 79-1070 (III.4); magma/xenolith relationships in volcanic and plutonic rocks, 79-830, 4183; alkaline earth ions in thermal waters, 79-1461; structure and geodynamics of upper mantle, 79-1707; trondhjemitic layers in eclogites and amphibolites, 79-3231 (14); K-feldspars from granite, 79-2921; ultramafic xenoliths in peridotites, 79-2920; MnO in alkali basalt lavas, 79-2477; large magnetic anomaly, 79-3468; Pb-Zn-Ag deposits, 79-3467; metal deposits in regional geol. history, 79-3451; veins and stratabound fluoritebaryte deposits, 79-3529; Millevaches massif, trace elements in granites, 79-1399; granites and leucogranites, 79-1704-1706;

Mont-Dore massif, (Fe, Mn, Mg) tetra-silicic potassium mica, 79-2804; Nice to aeromagnetic data. 79-4366; Gap, Occitania, deformation microstructures in feldspars, 79-4049; Paris basin, zeolites in Cenomanian littoral deposits, 79-4061; Parthenay, weathered two-mica granite, 79-2061; massifs of Pierre qui Vire and Settons, Morvan, granite relations, 79-60; Provence, bauxites, 79-3530; Puy de Clierzou, kaersutite, 79-1885; Pyrenees, age and significance of metamorphism, 79-11; Albères, griphite, crystal structure, 79-2141; Néouvielle massif, quartz strain in granodiorite, 79-1829; ARIEGE, Luzenac, talc quarry, 79-1888; AVEYRON, decrepitation rate of fluorite and quartz, 79-1041; Mazega, langite, 79-2861; AUDE, Montagne Noire, Agout massif, metamorphic rock suite, 79-918, 919; CANTAL, Chaudes-Aigues, halotrichitepickeringite-group deposits, 79-3087, COR-RÈZE, Farges, lead-silver mine, 79-1199; CÔTES-DU-NORD, Trémuson Pb-Zn-Ag volcano-sedimentary deposit, 79-2179; DORDOGNE, Saint-Paul-la-Roche, plasticity of quartz, 79-3602; FINISTÈRE, Bestrée Pb-Sb deposit, 79-961; Île de Batz, pegmatite with large beryls, 79-2783; Bodennec, discovery of Pb-Zn-Cu-Ag deposits, 79-2176; detailed reconnaissance, 79-2177; Cu-Pb-Zn deposit, geochem. mapping, 79-1477; Bodennec and Porteaux-Moines Zn-Pb-Cu-Ag deposits, mineralization model, 79-2178; Plougoulm, idocrase, grossular, scheelite skarn, 79 2767; GARD, quartzites and sandstones, 79-1420; HAUTE-GARONNE, mineral guidebook, 79-962; HAUTE-SAÔNE, Creveney-Ornans district, bituminous schists, 79-3857; Rahin R. valley, Pb anomalies in soil, 79-3893; LOIRE-ATLANTIQUE, Pannéce, crandallite, 79-3088; MAYENNE, Lucette mine, history of Sb mining, 79-3508; MORBIHAN, Ile de Groix, coexisting blue amphiboles, 79-PYRENEES-ORIENTALES. 2798: Albères massif, non-metamict griphite, 79-2871; SAVOIE, Belledonne massif, scheelite in mica schists, 79-2208; Haute-Maurienne, paragenesis of manganese deposits, 79-2770; Vanoise, Bramans-Termignon evaporites, element ratios in hypersaline inclusions, 79-3785; TARN, . Lacaune, failure of slates, 79-1301; VAR, Bormes, heavy minerals in beach sands, 79-3000; Cap-Garonne, minerals from, 79-1887; Thoronet, bauxites, 79-2007 (4); nickeliferous nodules, 79-2007 / (9); VOSGES, Cu-Mo sulphide mineralization of œillets prospect, 79-3801; Ballons granite, high-temp. Cu arsenides, 79-2856; Sainte-Maire-aux-Mines, Engelsbourg mine, Bi paragenesis, 79-3510 , CORSICA, gravimetric survey, 79-4145;

Caledonian events in Variscan massifs, 79-771 (22); granite, 79-1950; ophiolitic metabasalts, 79-2478; Alpine zone, arsenide mineralization, 79-3475; Marine d'Albo, eclogite relics in ophiolite nappe, 79-4315; geochem. of Puzzichello spring waters, 79-3389

Freeze-drying techniques in mineral synthesis, 79-244

Freudenbergite, synthetic, crystal structure, 79-1132

Friedelite, France, 79-2770

Friedichite, Austria, new aikinite-bismuthinite mineral, chem., opt., X-ray, 79-4117

Frigidite v. tetrahedrite

Fulgurites, Germany, comparison with tektites, anal., 79-2739 Fuller's earth, SE England, in Lr. Greensand,

79-1231; Avon, 79-792

Fülöppite, France, 79-961

Fulvic acid, ESR spectra, 79-3865; IR spectra, 79-3293; effect on release of fixed potassium, 79-1083; in Florida estuary sediments, 79-2543

Furnaces, wire hook supports, 79-3574

Gabbro, DSDP leg 37, trace element geochem., 79-465; Norway, coronites from, 79-821; Finland, geochem., 79-451; olivine -, coronas in, 79-3024; Scotland, layered, chilled margin, 79-3806; *Ireland*, geochem., petrogen., 79-4182; *Portugal*, chem., 79-3817; Germany, orbicular, P-T conditions, 79-2923; Poland, diallage —, hydrothermal mineralization in, 79-1201; USSR, gabbro diabase, 79-835; Greece, 79-4192; Indian Ocean, RE and Rb/Sr systematics, 79-3827; New Zealand, geochem. variations, 79-1730; Ontario, magnetic overprinting, 79-1867; 79-3174; K/Ar study, magnetic, Massachusetts, chem. mineralogy, 79-2774

GABON, Oklo mine, shale repository for radioactive waste, 79-1254; natural reactor, Eh-pH diagrams, 79-1372, 1373

Gadolinite, Norway, 79-410; Switzerland, 79-1893

Gadolinium, diffusion in basalt and obsidian, 79-1286

- compounds, Gd<sub>5</sub>Al<sub>5</sub>O<sub>12</sub> phase, X-ray, 79-

270 Gaidonnayite, Quebec, identity with a-cata-

pleiite, 79-4014

Galena, trace elements in, 79-741; deformation of single crystals, 79-3592; Avon, in Rhaetic shales, 79-1884; France, anti-monian, 79-961; Russian SFSR, Pb isotope ratios, 79-3484; Tasmania, trace element distribution, 79-3793; Western Australia, Pb isotopes and ages, 79-15; Greenland, 79-2849, 4098

Gallium, fusion method for XRF detn., 79-1052; Bulgaria, geochem. in Madan orefield deposits, 79-432; Western Australia, in sedimentary rocks, 79-1424

compounds, GaSe, dislocation studies, 79-3673;  $\alpha$ -gallium oxide deuteriohydroxide, neutron diffraction study, 79-187 Ganophyllite, crystal structure, 79-157

Garavellite, Italy, new mineral, chem., opt.,

X-ray, 79-2877

Garnets, symposium, 79-2754; crystal structure description, 79-3349 (40); opt., 79-4329; biaxiality, 79-938; recasting analyses into end-member molecules, 79-4007; detn. of garnet content of rocks, 79-3194; thermodynamic props., 79-259, 941; phase transformations in CaSiO3-Al2O3 system, 79-3698; correlation of Mg/Fe partitioning with biotite, 79-2567; Sm3+ partitioning with melts, 79-3696; RE partitioning with pyroxenes and melts, 79-3639; partitioning of Ti, Al with garnets and oxides, 79-354;

Garnets (contd.)

trace element partitioning with peridotite, 79-3633; RE solubility, 79-285; solubility in clinopyroxene and grospydite, 79-3723; cordierite-garnet equilibrium, 79-347, 348; coexisting with pyroxenes, effect of pressure on comp., 79-341; in lherzolite nodules, geochem, of transition elements, 79-417; as geothermometer and barometer, 79-349; olivine-garnet geothermometer, 79-3691; trace element distribution between megacrysts and volcanic liquid, 79-1280; magnetic liquid phase epitaxial growth, 79-1066 (3); hydrothermal crystallization, 79-1066 (4); synthetic Ti -, IR spectrum and structure, 79-3697; Scotland, 79-4181; relationship between chem. and textural zoning, 79-1589; progressive homogenization, 79-2755; Fe/Mg distribution with biotite, 79-3028; France, anal., 79-2783; Spain, in metabasites, 79-920; Italy, 79-921, 1833; Poland, chem., opt., 79-453; Russian SFSR, 79-902, 3042; Africa, Na, K, P, Ti in, 79-4005; Tanzania, gem suite, 79-393, 394; Zambia, in borosilicate rock, 79-2780; Lesotho, 79-3233 (II.4, 7); South Africa, in kimberlite, 79-3233 (III.2); coexisting Cr-poor and Cr-rich garnet, comp. X-ray, 79-3233 (III.7); contact metamorphism product, 79-3037; India, in lenses in metasediments, 79-3039; fission-track dating and estimation of uranium in, 79-3166; Japan, 79-3044; from scheelite skarns, 79-2765; Taiwan, X-ray, opt., 79-4029 New South Wales, comp. as metamorphic indicator, 79-933; Antarctica, from plutonic rocks, 79-4010; British Columbia, reaction to form cordierite, 79-2756; zoned, homogenization, 79-2757; Northwest Territories, aggregates from metagreywacke, 79-2761; Ontario, zoning as product of continuous reaction, 79-2759; Arizona, 79-3233 (IV.2); Colorado, garnetiferous ultramafic inclusion in minette, 79-3233 (IV.3); New York, chem., 79-2785; Tennessee, around marine sulphide deposits, chem. zoning, 79-655; Venezuela, in eclogitic rocks, zoning, 79-2760

-, almandine, synthetic, hydrostatic compression, 79-1863; almandine-grossular solid solutions, thermodynamic props., 79-2299; mixing props., 79-3695; Norway, pseudomorph after plagioclase, chem., 79-2764; western Alps, zoned, 79-652; South Africa, almandine-pyrope in granulites, 79-2158 (10); Pennsylvania, calcium zon-

ing, 79-2758

-, andradite, low-temp. stability, 79-343; effect of excess Fe<sub>2</sub>O<sub>3</sub> and SiO<sub>2</sub> on synthesis rate, 79-2373; Sn-rich, from slag, 79-1331; Germany, yellow variety, 79-3092; Russian SFSR, 79-901

-, gadolinium-gallium ---, crystal growth,

79-1066 (2)

-, grossular, crystal structure and compressibility, 79-940; high-temp. heat capacity, 79-3558; Fe<sup>2+</sup> and Fe<sup>3+</sup> distributions, Mössbauer study, 79-2098; grossular-almandine solid solutions, thermodynamic props., 79-2299; grossularandradite series, X-ray detn., 79-2768; grossular-pyrope phase relations, 79-2376; Cornwall, grossular-andradite, 79-1817; France, in skarn, 79-2767; Spain, grossular-andradite, 79-3472; Switzerland, 79-1894; Russian SFSR, 79-901, 902; Canada, green, chem., 79-4009: Massachusetts, grossular-andradite, 79-2774; Montana, 79-4287

-, pyralspite, Italy, from eclogites, 79-1834

- -, pyrope, calculation of comp., 79-2763; crystal structure and compressibility, 79-940; synthetic, hydrostatic compression, 79-1863; phase relations, 79-342; stability of phlogopite with, 79-359; enstatite-pyrope geobarometer, 79-3725; pyrope-almandine, near IR spectrum of Fe2+, 79-2097; Russian SFSR, specific heat, anal., X-ray, 79-941; Ukraine, from clastic rocks and sediments, chem., 79-2762; South Africa, from kimberlites, 79-653, 654
- -, RE-iron ---, electric-field gradients, 79-143

-, schorlomite, Japan, chem., X-ray, 79-

-, spessartine, France, 79-2770; Kenya, anal., X-ray, 79-2769; Brazil, 79-1226

- -, uvarovite, Turkey, 79-2811; Papua New Guinea, anal., 79-4008; Quebec, opt., Xray, 79-4009
- yttrium-iron —, crystal growth, 79-1066 (1); spin and charge density, 79-3349 (16)

Garnierite, Brazil, occurrence, min., chem.,

Gases, release and anal. from geol. samples, 79-3215; extraction and anal. from volcanic rocks, 79-3214

Gehlenite, thermal minimum in anorthiteåkermanite-gehlenite, 79-2407; gehleniteferrigehlenite solid soln., synthesis, stability, 79-2374

Geikielite, Russian SFSR, 79-730, 901 Gemmological instruments and techniques, 79-3771

Gemmology, role of reflectivity, 79-404

Gemstones, faceted, goniometry, 79-1363; optical effects in, 79-406; study by use of polarized light, 79-405; cathodoluminescence, 79-1364; colorimetry, 79-1365; colouration by transition elements, 79-1366; faceting, 79-3774; gemstones and abrasives, 79-1349; early stages of Verneuil synthesis method, 79-389; future resources, 79-3775; Kenya, 79-2439

Geochemical exploration using marine mineral suspensates, 79-478

parameters, W and R, 79-1380

- prospecting data, statistical treatment, 79-498
- reference materials from CMEA countries. 79-2640
- stream surveys, spatial data presentation, 79-499
- systems, measure of complexity, 79-2454; computer modelling of irreversible evolution, 79-2447

Geochemistry, book, 79-2009, 2017

Geochronology v. age determination

Geocronite, China, anal., opt., 79-744 Geological standards, anal. results, 79-2618;

certification of materials, 79-2620 Geomagnetic field, spherical harmonic models,

79-985, 3078; reversal time scale, 79-1940

Geophysical methods in mineral exploration, 79-3443

Georgeite, Western Australia, new mineral, chem., opt., 79-2878 Geostandards, production and use, 79-2634

Geothermal fields, hydrothermal alteration in, 79-71 (11)

systems, chem. geothermometry, 79-3883; Iceland, high-temp., aquifer chem., 79-1459 Gerhardtite, crystal structure, 79-75

Germanite, Cu oxidation state, 79-2858 Germanium, in USGS standard rocks, 79-3900; bond parameter, 79-3349

- compounds,  $GeO_2$ , high-pressure modification, X-ray, 79-2413; Ge coordination in  $GeO_2$  crystals and melt, 79-3611; viscosity changes in melt with pressure, 79-3610; GeP-type structure, Madelung constants, 79-188

GERMANY, evaporites from Werra series of Zechstein, 79-1456; clay mineral content and facies for Tertiary sediments, 79-105; pristane in Messel Shale, 79-2546; metal pollution around brickworks, 79-1252; iron ore standards, 79-2621; S, celestine mineralization, 79-2469; W, Mn in acid soils, 79-89; mineralogy and heavy metals of soil and stream sediments, 79-2064; Arensberges, minerals in basalt cavities and inclusions, 79-3089; Bellerberg, Eifel, pseudobrookite overgrowths on hematite, 79-3394; Bergen an der Trieb, phurcalite, new mineral, 79-767, 3425; Bergsträßer Odenwald, petrog. study of rock types, 79-1830; NE Bavaria, Tertiary clays, 79-1094; Black Forest, petrol. of porphyry granite dyke rocks, 79-832; Bodenmais, anthophyllite gneiss from Fe-sulphide deposit, 79-3033; sphalerite geobarometry, 79-4093; Elbe R., heavy metal coprecipitation with CaCO<sub>3</sub>, 79-1250; Erzebirge, trace elements in pyrite, 79-741; metallogeny of tin, 79-1070 (I.2); granites and tin deposits, 79-1070 (II.6); development of pluton, 79-1070 (III.1); Variscan granites, 79-1070 (III.10); Fichtelgebirge, opal, 79-1353; Gleisinger Felsen, quartz hematite veins, 79-2468; Göttingen, mineralogy and geol., 79-4140; Hagendorf, keckite, 79-4119; secondary phosphate minerals, 79-4373; wolfeite, 79-2869; Harz, mineral occurrences, 79-1896; Hesse, Harmstorf, langbeinite, Lautenthal, mining in area, 79-2188; geochem., genesis of Ramberg pluton, 79-1070 (III.13); Iba, serpierite and posnjakite on Kupferschiefer, 79-2862; Käfersteige, fluorite deposit, fluorite deposit, 79-3532; Kaiserstuhl, minerals from carbonatite, 79-963; Kropback/Münstertal, boyleite, new mineral, 79-1647; Messel, messelite and anapaite in oil shale, 79-3090; Münchberg gneiss massif, dating of eclogites and country rock, 79-1949; Neckar R., brushite suspended in water, 79-1251; Odenwald, Bi-Co-Ni-Ag-U formation, 79-2187; fulgurites on basic alkaline rock, 79-2739; Pansberg, variscite, 79-1642; Regensburger granitization, 79-3032; Ries Crater, zeolitization of glasses, 79-1581; Reichenbach, P-T conditions of orbicular gabbro, 79-2923; Renisches Schiefergebirge, evolution 79-3020: of slaty cleavage, Andreasberg, yellow andradite, 79-3092; Saxon Vogtland, Erzebirge, Lausitz, xenoliths in Tertiary volcanic rocks, 79-834; Schneeberg, roselite, 79-2140; köttigite, crystal structure, 79-3428; Schellkopf,

GERMANY (contd.)

brenkite, new mineral, 79-764; Schwarzach Valley, Y and Zr in soil and stream sediment, 79-2607; Vogelberg, mineral occurrences, 79-4374; Waldgirmes, matulaite, new mineral, 79-765; Rotläufchen mine, secondary phosphate minerals, 79-758; Werra potash area, clay minerals in basaltsaliniferous deposit contacts, 79-106; Westerhof, calcite-depositing spring system, 79-2578

Gersdorffite, Morocco, 79-3099

Gibbs energy of diaspore, boehmite, bayerite, 79-2302

Gibbs-Duhem equation, application to water

and magmas, 79-3627

Gibbsite, 79-2033; crystallization from dilute aluminium solns., 79-1082; heats of soln., 79-2302; formation from plagioclase, 79-2072; Japan, 79-2057

Gillespite, polarized absorption spectra at high

pressure, 79-294

Glacial inception and disintegration, 79-71 (10); Sweden, glacial drift, geochem. anomalies, 79-3892

Gladstone-Dale relationship, 79-4328

Glasses, hydrous, phys. props., 79-3628; oxide -, multivariant system, 79-265, 266; feldspar ---, structure, 79-2117; granite ---, crystallization at 700°C, 1 kbar, 79-370; volcanic -, hydrothermal alteration, 79-363; in basalts from DSDP Legs 45 and 46, 79-2973; glass-ceramic materials, mixedcrystal problems, 79-1306; altered, possible source of Martian clay minerals, 79-2660; Reunion I., defining fractional trends in lavas and xenoliths, 79-4224; Australia, in ultramafic xenoliths from Newer basalts, 79-2980; from New Zealand steelworks slag devitrification, 79-2326; California, in altered granodiorite, 79-1822; Gulf Mexico, volcanic, fission-track age, 79-3186

Glauconite, distinction from celadonite, chem., 79-689; gases evolved on heating, 79-2396; glauconitic greensand as heavy metal filter, 79-2252; detn. of radiogenic 40Ar in, SFSR. 79-2816; 79-2646: Russian Bulgaria, sedimentary origin, 79-1794; India, from sandstone, anal., 79-688; Japan, in sedimentary rocks, 79-2056; New Zealand, authigenic, perigenic, allogenic,

79-1606

Glaucophane v. amphibole

Gmelinite v. zeolite

79-4290; Norway, Gneisses, anatexis, metasedimentary, 79-910; petrog. and geochem., 79-1443; Scotland, 79-792; highgrade Archaean complex, RE distributions, 79-1445; granulite facies, retrogressive metamorphism, 79-1444; *Scotland* and Greenland, geochem., 79-3231 (8); Outer Hebrides, Lewisian, basic minor intrusions in, 79-915; Austrian Alps, granitoid gneisses, 79-4307; Saudi Arabia, Pan African ages, 79-3163; Swaziland, geochem. of Archaean complex, 79-487; South Africa, geochem. study, 79-2158 (23); Japan, orbicules in, 79-4319; chem. reactions at amphibolite boundary, 79-4286; New Zealand, geothermometry and barometry, 79-4075; Greenland, Archaean, origin of continental crust, 79-3231 (6); British Columbia, pre-Carboniferous, 79-3052; Labrador, U-Th-Pb geochron., 793172; zircon age measurements, 79-3173; metamorphic developments, 79-3231 (7); Colorado, rutile-bearing, 79-1856; Virginia, petrog., 79-4325; Washington, Jurassic metamorphism, 79-31

Goethite, 79-2007 (8); structure, 79-187; magnetite hydrothermal crystallization, 79-1066 (4); sulphate adsorption, 79-274; adsorption isotherms, 79-2348; pedogenic transformation from hematite, 79-3321; Finland, 79-428; Switzerland, 79-1891; Virginia, 79-1741

Gold, phys. props., 79-3055; volatilization by chloridizing roast technique, 79-3459; role of humic acid in transport, 79-1385; Switzerland, 79-3095; USSR, Pd-bearing, opt., 79-4065; *India*, paragenesis of mineralization, 79-3523; *Fiji*, porphyry mineralization in shoshonite, 79-2213; Queensland, supergene enrichment, 79-Australia, 79-3101; 1187; Western California, 79-3118

deposits, Spain, in alluvial piedmont, 79-3471; Austria, 79-968; Switzerland, placer deposits, 79-3473; Russian SFSR, vertical zoning, 79-3483; Japan, 79-1182; British Columbia, lode deposits, 79-1192; Queensland, Au-Ag-U deposit, 79-1215; Au-Cu deposit, geol. and geochem., 79-1212; Nevada, trace elements, geol., genesis, 79-3794

mining, India, geol. and methods of working, 79-3522

-, native, USSR, from sedimentary-metamorphic formations, 79-224; new morphology, 79-2152

Goldfieldite, USSR, isomorphous series with tetrahedrite, 79-743

Goniometry, from photographs or angle-true sketches, 79-1036; measuring faceted gemstones, 79-1363

Goudeyite, Nevada, new mineral, anal., opt., X-ray, 79-1653

Grain shape effects on settling rates, 79-875 Grandidierite, Zambia, in borosilicate rock, 79-2780

Granite, trace elements in standard rock, 79-2612, 2626; NAA of standard granite G-2, 79-3904; synthetic peraluminous, melting experiments, 79-3652; effect of boron on solidus, 79-3650; yield strength, 79-3599; compressional and shear wave velocities, 79-4355; hypervelocity impact 79-599: microfractures, and mineralization, 79-1149; ore-bearing, element differentiation, 79-1070 (IV.10); evolution of ore deposits in, 79-3440; cogenetic and inherited zircon U/Pb systems, 79-1056 (3.6); two-mica, silver homogeneity, 79-1995; granite-greenstone terrains related to late Archaean mafic dykes, 79-1674; Norway, 79-786; radioelement studies, 79-450; Th, U, K and heat production, 79-449; Sweden, 79-4177; ages of intrusions, 79-3148; Finland, Rapakivi ---, associated with Sn, Be, W mineralization, 79-1070 (III.6); Scotland, Pb isotopic comp. of feldspars, 79-3152; SW England, Variscan granites, 79-1699; cluster anal. of chem. data, 79-1398; Cornwall, 79-792; megacrystic members of Carnmenellis granite, 79-1700; Ireland, emplacement, 79-1056 (3.7); origin of sulphide deposits, 79-1172; France, 79-60; trace element

abundances, 79-1399; chem. comp. and mineral facies, 79-1705; cartography and statistical study of comp., 79-1706; biotite weathering in 79-2014 (4.9); weathering mineral facies, 79-2061; associated with migmatites, petrogen., 79-3031; non-coaxial deformation, 79-4147; Corsica, 39Ar/40Ar systematics and tectonic events, 79-1950; Spain, mineralized, geochem., petrol., 79-1070 (III.12); Portugal, origin of pink colour, 79-4185; Germany, related to tin deposits, 79-1070 (II.6); Variscan, petrol. geochem., 79-1070 Czechoslovakia, USSR, tin-bearing, 79-1070 (III.14); USSR, anal., 79-1209; Russian SFSR, rare-metal-, phases and facies, 79-1070 (III.9); Kazakhstan, raremetal-bearing, 79-1070 (II.4); Oman, high-K, 79-2978; Nigeria, mineralization, 79-1070 (III.3); Zn-rich tin province, 79-1177; Malawi, hypersthene-, petrol. and geochron., 79-2927; Botswana, stream sediments derived from, 79-2605; South Africa, genesis and associated mineralization, 79-2158 (27); India, emplacement of plutons, 79-4150; Malaya, deep-weathering profile, 79-115; Thailand, geochron. and geochem., 79-3167; China, discrimination anal., 79-2461; Pacific Ocean, K/Ar ages, 79-1010; Tasmania, Sn-bearing, vertical geochem. zonation, 79-1070 (III.5); North America, rapakivi, 79-853; Newfoundland, age, geol. setting, 79-3169; Gulf of Maine, Upper Ordovician peralkalic granites, 79-2946; Colorado, phase of Mt. Evans pluton, 79-1740; South Dakota, weathered and stream transported quartz from, 79-1966; Wisconsin, Precambrian, field relations and geochem., 79-1734; Peru, 79-792

Granitic clasts, British Columbia, selective weathering, 79-3307

glasses, crystallization at 700°C, 1 kbar,

79-370

79-2321; genesis, 79-4290; magmas, mobilization of tin from, 79-1070 (IV.9)

- melts, solubility of water in, 79-3631 rocks, water-soluble chlorine in, 79-3807; Germany, petrol., 79-832; Russian SFSR, petrogen. of intrusions, 79-4193; Egypt, petrog., 79-4195; petrogen. and age, 79-1711; Japan, chem. correlation with country rocks, 79-843; content and behaviour of fluorine, 79-2487; chem. of biotites and hornblendes, 79-686; degree of oxidation of magmas, 79-1070 (III.15); Victoria, thermal history, 79-1017; Maine, alteration of mica and feldspar in, 79-2499; Canadian Shield, geochron., 79-19; Northwest Territories, RE and trace element data, 79-3824

Granitization and melting of crustal rocks, 79-3021; Germany, mixing of crustal rocks and magmas, 79-3032

Granitoids, rare-metal-, genesis, 79-1070 (III.8); accompanied by tin, rare-metal, tungsten mineralization, 79-1070 (III.11); structure and mechanisms of massif formation, 79-4127; Portugal, chem.-min. classification, 79-4184; Poland, jointing, 79-1665; post-magmatic mineral formation, 79-900; dyke rocks from massif, 79-1708; Czechoslovakia, Sn-W-Mo ore-bearing, 79-1070 (III.2); accessory mineral studies, 79-4187; Hungary, RE in, 79-3814; USSR,

Granitoids (contd.)

distribution of K, Rb, Tl, 79-1450; Russian SFSR, petol. and geochem., 79-2935; Ukraine, Precambrian associations, 79-2906; Red Sea, geochem. of pluton, 79-3818; Japan, chem. variation, 79-4201; tin content, 79-4285; magnetite- and ilmeniteseries, S isotopic comp., 79-2489; Cameroon, petrog., geochron., 79-1008; New South Wales, 79-1727; contrasts between I- and S-types, 79-1725, 1726; Western Australia, hornblende-bearing, 79-1716; New Zealand, geochem. variations, 79-1730; Ontario, Rb/Sr chronology of batholith, 79-1962; RE distribution, 79-3830; oxygen-isotope geochem., 79-3231 (11)

Granodiorite, anal. as powdered rock and fused glass, 79-2643; England, albitized, 79-792; Northern Ireland, 79-1703; France, quartz strain, 79-1829; Swaziland, geochem., 79-487; New South Wales, example of crustal anatexis, 79-3168; California fusion by basalt, 79-1822; Massachusetts, whole-rock age determinations, 79-1964; West Indies, Sr isotope geochem., 79-3836

Granolites, *India*, orthopyroxene-bearing, 79-

Granophyres, *India*, 79-842; origin, 79-3249

Granulite, compressional and shear-wave velocities, 79-4355; Cornwall, hydrothermal mineralization, 79-1815; Africa, 79-3036; review, 79-3035; Lesotho, lower-crustal, 79-3233 (II.4); South Africa, reactions in, 79-2158 (10); contact metamorphism, 79-3037; Japan, plagioclase-bearing, 79-3045; Australia, Rb/Sr chronology, 79-1956; Brazil, geotectonic environments, 79-4327

Granulite-facies rocks, Western Australia, petrog. and origin, 79-1843

Grapestones, experimental aggregation, 79-

Graphite, atomic thermal motions, 79-1122; grindability, 79-1980; lonsdaleite-graphite phase transformation, 79-2334; used in solid-state reduction of chromite, 79-2338; in eclogite, 79-3233 (II.1, 3); Poland, stable C isotope comp., 79-3872; Japan, C isotopic comp., 79-1388; Ukraine, formation conditions, 79-3790

Gravel resources, Berkshire, 79-2223; Essex, 79-1232; 2220; Lincolnshire, 79-2221; Oxfordshire, 79-3528, South Yorkshire, 79-2222; Highland Region, 79-1230;

Strathclyde, 79-2219

GREAT BRITAIN, early mineralogy, 79-983; Mesozoic vertical movements, 79-1056 (4.3); N, Caboniferous volcanism, 79-1056 (4.1); gravity and magnetic anomalies, 79-1056 (2.3); NW, crustal evolution, book, 79-1056; evolution of fault-controlled ensialic basins, 79-1056 (4.4)

GREECE, chromites, Os, Ru, Ir contents, 79-1382; peridotite massifs, 79-456; fibroferrite, 79-1899; bauxites, magnetic props., 79-2007 (1); bauxite genesis, 79-2007 (22); mineralogical comp., 79-2007 (23); Corinth, volcanism, neotectonics, postvolcanic phenomena, 79-69 (17); Itéa, rancieite, 79-1629; Kassandra peninsula,

pyrite with diploid form, 79-4091; Lakonia, Neogene marls, 79-4261; Larymna/Lokris and Euboea, bauxites and Ni-Cr-Fe laterites, 79-2007 (2); Laurium, one-locality minerals, 79-974; Macedonia, volcanic rocks, 79-1756; brindleyite from Marmara karstic bauxite deposits, 79-1648; Melos, Cyclades, obsidian occurrences, 79-69 (18); Methana, thermomineral springs, 79-69 (20); Milos, high-pressure assemblages, 79-4243; Naxos, metamorphism of siliceous dolomites, 79-1837; thermal dome, 79-3780; Othris Mts., evolution of Mesozoic continental margin, 79-4146; ophiolite complex, 79-2977; Parnasse, bauxites, 79-2007 (5, 6); Peloponnese, mineralogy of river sands, 79-3001; Pindos ophiolite sequence, rodingitization, 79-1447, 1819; upper Saronikos Gulf, bottom sediments in polluted marine environment, 79-1253; Sifnos, jadeite-quartz in glaucophane rocks, 79-1838; Strimon R. basin, post-Pliocene volcanic activity, 79-69 (5); Syros, omphacites, 79-663, 4024; sodic pyroxenes from blueschist terrains, 79-2793; Thessaloniki gabbros, 79-4192; Xanthi and Ouranoupolis, adularia, 79-698

Greenalite, Minnesota, Ontario, 79-934

GREENLAND, magnetite morphology, 79-1623; Precambrian shear belt, shape fabrics and shear strain, 79-4132; mineral deposits, 79-3232 (5); Greenland-Labrador craton, Sr evolution, 79-2528; E, infrastructural migmatitic upwelling, 79-4294; geochem. Cu prospecting, 79-2602; Archaean trondhjemitic and tonalitic gneisses, 79-3231 (8); isotopic ages in Caledonian fold belt, 79-8; Caledonian fold belt, 79-771 (17); S, age and origin of post-tectonic intrusions, 79-7; SE, development of continental margin between British Isles, 79-1056 (4.6); SW, ages of dolerite, 79-25; W, continental margin, Mesozoic and Cainozoic sediments, 79-1682; Borgtinderne syenite, fractionation and assimilation, 79-818; Disko, dyke intrusions, 79-815; Asuk, magnesian spinels in shale xenoliths, 79-1625; buchite xenolith with Al-armalcolite and native Fe. 79-4069; Gieseckes Dal and Hammers Dal, Fe-bearing volcanic rocks, 79-812, 813; Igdlukunguak, Fe oxides and pyrrhotites, 79-4070; Mellemfjord area, Tertiary volcanic geol., 79-814; Fiskenæsset, dating igneous and metamorphic events, 79-1939; ruby and kornerupine, 79-2428; Gardar igenous province, gravity survey, 79-994; Godthåb, Archaean grey gneisses, 79-3231 (6); Igdlerfigssalik nepheline syenite intrusion, crystallization history, 79-4173; Ilímaussaq intrusion, cuprostibite and associated minerals, 79-4098; ore minerals, occurrence and formation conditions, 79-2849; Isua, S isotope studies in early Archaean sediments, 79-3851; C isotope geochem., 79-2509; Isukasia, metamorphosed chert and iron formation, 79-490; Ivigtut, pegmatite minerals, 79-4371; Kangâmiut dykes, whole-rock isochron age, 79-6; Kangerdlugssuag, Tertiary dyke swarms, 79-817; Narsarsuk, α-catapleiite, 79-4014; Scoresby Sund area, Tertiary flood basalts, 79-1695; Skaergaard intrusion, palaeomagnetic results, 79-4365; origin of rythmic layering, 79-816; fractionation trends, 79-268; Sr, Pb, O isotopic investigation, 79-1396; early magma differentiation stages, 79-4174; structure of trough bands, 79-4175; marginal border group, petrol. features, 79-4176; melting relations of chilled margin sample, 79-3645

Greensand, glauconitic, as filter of heavy metal cations, 79-2252; filtering landfill leachates, 79-3547

Greenschists, strain histories and deformation mechanisms, 79-3026

Greenstone belts, mineralization processes, 79-3454; Archaean, trace-element geochem., 79-1377; granite-greenstone terrains, 79-1674; Victoria, marginal sea-crust slices, 79-1774; Manitoba, tectonic evolution, 79-1676; diapiric structures and regional compression, 79-1677

Greisen, Cornwall, topaz-rich, 79-1816

Greisenization, *Poland*, geochem. conditions, 79-453

Greywackes, *Ireland*, evidence for Caledonian subduction, 79-882; Lr. Palaeozoic, petrol., 79-2996; *Zambia*, 79-2209

Grimaldiite, Guyana, 79-4081

Griphite, crystal structure, 79-3349 (37); France, 79-2141; non-metamict, anal., opt., X-ray, 79-2871

Grospydite, South Africa, 79-3723

Groutite, 79-2007 (8)

Gruneisen formulation of p-V equation of state, 79-2268

Grunerite v. amphibole

Guanglinite, China, new mineral, 79-1645

GUATEMALA, omphacite, 79-4024; chem. data on ophiolites, 79-1414; *Motagua* fault zone, omphacites, 79-663

Gudmundite, Greenland, 79-2849

Guildite, Arizona, crystal structure, 79-202 GULF OF CALIFORNIA, Isle Tortuga, volcanic rocks from young seamount, 79-3833

Gulf of Alaska v. Pacific Ocean

GULF OF GUINEA, tectonic activity, 79-3126, 3127

GULF OF MEXICO, dissolved organic carbon, 79-2553: near-surface variation of <sup>228</sup>Ra, 79-3881; age of Pliocene volcanic glass, 79-3186; heavy metals in sediments, 79-1262; isotopic exchange in quartz silt, 79-2534; Late Wisconsin flood into, 79-1457; *RE* in deeply buried *Gulf Coast* sediments, 79-2537

GULF OF OMAN, gas hydrate layers in trapping free gas, 79-3133

GUYANA, southern, geol., 79-4168; Guyana Shield, pyroxenes from tholeitic dykes, 79-668; Merume R., merumite, 79-4081

Guyanite, Guyana, 79-4081

Gypsum, crystal structure, 79-1146; solubility, 79-279; grindability, 79-1980; identification in soils and sediments. 79-3217; isotopic comp. of hydration water in, 79-2591; gypsum-organic interactions in marine environment, 79-2548; cation exchange capacity in soils, 79-81; dissolution of flowing water in gypsum beds, 79-273; Switzerland, 79-1891; Russian SFSR, 79-901; Mid-Atlantic Ridge, 79-2527; Nevada, replaced by marble, 79-491

Gyrolite, 79-356

Hackmanite, *Brazil*, 79-1902 Hafnium, in zircons, 79-651 Halite, Mid-Atlantic Ridge, 79-2527; South Africa, 79-4262; Michigan, fossils in

Niagaran reef, 79-760

Halloysite, synthesis of trimethylsilylation derivative, 79-3261; micromorphology, 79-2014 (4.9); transformation to metahalloysite, 79-2014 (7.5); in weathered plagioclase, 79-2033; New Zealand, in Late Pliestocene rhyolitic tephra beds, 79-2076; Virginia, 79-1741

Halotrichite, France, 79-3087

Haplogranite system, liquid compositions, 79-

Hardness, related to bond-ionicity, 79-944 Harkerite, Scotland, crystal structure, chem., 79-2122

Harzburgite, garnet, South Africa, mineral and bulk chem., 79-3233 (II.6)

Hauchecornite, USSR, As-bearing, anal., 79-742

Hauerite, Poland, in Badenian clays, 79-2515 Hausmannite, Japan, anal., X-ray, 79-4083

Heatflow, Norway, production in granites, 79-449; North China Plain, 79-3073; Pacific-Antarctic Ridge, 79-3077

Heavy liquids, decolourization, 79-1044

- metals, coprecipitation with CaCO<sub>3</sub>, 79-1250; in urban runoff in shallow estuary, 79-1265; extraction from soils, 79-3254; exchange processes in sediment-water systems, 79-2529; glauconitic greensand as possible filter, 79-2252; Tasmania, in Derwent Estuary, 79-1249; Canada, polluting lakes and streams, 79-2239; distribution in Jamaica Bay (New York) sediments, 79-2247; pollution in Lake Erie, 79-2245; Idaho, pollution in river sediments, 79-2248; Texas, (San Antonio Bay) and Gulf of Mexico, in sediments, 79-1262

minerals, Sweden, from placer deposits, 79-3448; North Sea, depth control of intrastratal solution, 79-4252; Scotland, distribution in Old Red Sandstone, 79-2993; Perthshire, influence of bedrock on stream content, 79-4251; France, assemblages in sands, 79-3000; Poland, from Quaternary deposits, use of average taxonomic distances, 79-2998; Tennessee, in Wilcox and Clairborne formations, 79-4277

Hectorite v. smectite

Hedenbergite v. pyroxene

Helium, lunar corona, 79-548; isotope ratios in volcanic gases, 79-2570; Japan, spots in upper mantle, 79-413

Helvine, IR spectra, 79-1119

Hematite, structural coherency with pseudobrookite, 79-3394; electronic-structure model, 79-3395; magnetic, hydrothermal crystallization, 79-1066 (4); exsolution from Fe-bearing rutile, 79-317; pedogenic transformation to goethite, 79-3321; sulphate adsorption, 79-274; hematite-ilmenite solid solution, configurational entropy, 79-267; in U-bearing sandstones, 79-4071; French Alps, pseudomorphosing siderite, 79-1637; Germany, quartz-hematite veins, 79-2468; Switzerland, 79-1894, 1895, 4376, 4378, 4379; New Jersey, bands in willemite, 79-3068; Virginia, 79-1741; Brazil, 79-3120; Argentina, hematite deposit, 79-2150

Hemimorphite, neutron-diffraction study, 79-

Henry's Law, Sm behaviour in plagioclase/

melt system, 79-1274; limits of solution of trace elements in minerals, 79-1288; defect chemistry, 79-1289

Herderite-hydroxyl-herderite series, comp. and RI variation, 79-1641

Heterosite-purpurite, Connecticut, 79-975

Heulandite v. zeolite

Hexahydrite, alteration with seasons, 79-750 Hexastibiopalladite, China, new mineral, 79-

Hexastibiopanickelite, China, new mineral, 79-1645

Hidalgoite, France, 79-1887

High pressure and temp. generation in large volume, 79-2276

temperature measurement progress, 1971-7, 79-2272

Hilgardite, crystal structure. 79-2129; Louisiana, crystal structure, 79-3418

HIMALAYAS, tectonic geol., book, 79-3248; rise and plate tectonics, 79-4395; comparison of Himalayan and Sveconorwegian tectonics, 79-3248 (13); modified arc system and gravity tectonics, 79-3248 (15); E, stratigraphy and tectonics, 79-3248 (11); counterparts in Himalayan and Alpine anatomy, 79-3248 (14); v. also India

Hollandite, intergrowths with romanechite, 79-3396

Holtite, USSR, opt., X-ray, 79-662; Western Australia, 79-3101

Hongquiite, China, new mineral, 79-1645 Hongshiite, China, new mineral, 79-1645 Hopeite, crystal structure, 79-3423

Hornblende, v. amphibole Hornblendite, New Zealand, margarite in,

Humates, specific surface of Na<sup>2+</sup>-humate, 79-2047

Humberstonite, crystal structure, 79-75

Humic acids, IR spectra, 79-3293; structure study, 79-3346; transition metal bonding, 79-2561, acid-base equilibria, 79-2551; effect on release of fixed potassium, 79-1083; role in transport of gold, 79-1385; removal during mixing of estuary water, 79-239; in Florida, estuary sediments, 79-2543

substances, source indicators, 79-2558

Humite, boron content, 79-3781; Sweden, magnesian manganhumite, crystal structure, 79-1104; France, Mn-, 79-2770; New York, 79-3107

, chondrodite, hydroxyl, crystal structure, · 79-142; Arizona, titanian, crystal chem., 79-1106

—, titanian clinohumite, *Italy*, 79-921; *Arizona*, crystal chem., 79-1106; *Brazil*, from carbonatite, 79-1626

structures, mixed-layer characteristics, 79-

HUNGARY, bauxite mining, 79-2007 (11, 12); bauxite, oolitic textures, 79-2007 (18); alumina processing, 79-2007 (19); clay mineral comp. of soils, 79-2014 (4.2); granitoid rocks, genetic significance of RE in, 79-3814; Oligo- and microelements in Mesozoic and Cainozoic rocks, 79-3845; geothermal conditions and hydrocarbon prognostics, 79-4392; Darnó, ophiolite complexes, 79-4238; Szendrö Mts., metamorphism of sedimentary formations, 79-4308; Vác-Nagyzál limestone area, metasomatic dolomitization, 79-4282

Hungchaoite, California, opt., phys., 79-4110 Huntite, Russian SFSR, anal., X-ray, 79-755 Hureaulite, Brazil, 79-3118

Hurlbutite, crystal structure, 79-2123 Huttonite, crystal structure, 79-3354

Hyalite, Switzerland, 79-1890 Hyalophane v. feldspar

Hydroboracite, California, from Furnace Creek formation, 79-3112

Hydrocarbons, thermocatalytic production, 79-1297; association with clay particles in simulated sea-water, 79-1244; sorption by gypsum, 79-2548; Hungary, geothermal conditions in exploration, 79-4392; Labrador Shelf, from ancient sediments, 79-3863; in Gulf of Maine sediments and Nova Scotia soils, 79-2547; Brazil, stratigraphic anomalies in Irati oil-shale, 79-1437

Hydrochlorborite, Chile, crystal structure, 79-1138

Hydrochloric acid, HCl-H<sub>2</sub>O mixture, P-V-T relations, 79-2289; dissolution of smectites, 79-2035; ionization constant as function of T and P, 79-3583

Hydrogen, diffusion and solubility in silicon carbide, 79-313; concentration profiles in

quartz, 79-704

- isotopes, fractionation in mineral-water systems, 79-3229; between epidote group minerals and water, 79-3703, 3704; osmosis in experimental systems, 79-3580; between aluminous hornblende and water, 79-3738; isotope effects during production of hydroearbons, 79-1297; *Italy*, in eclogites, 79-486; *Tyrol*, study of polymetamorphic area, 79-1446; *Japan*, D/H ratios of hydrous silicates, 79-3782; in biotites, 79-3783

Hydromagnesite, thermal decomposition, 79-3674; Russian SFSR, 79-901; Turkey, 79-2811; Iran, hydrocarbon bonding, 79-204

Hydrotalcite, anion-exchange reactions, 79-2343; hydrotalcite-like systems, adsorption of N<sub>2</sub>, O<sub>2</sub>, CO<sub>2</sub>, H<sub>2</sub>, 79-3275

Hydrothermal activity, Colorado, 79-1392; Baja California, 79-1393

systems, computer modelling of physical chem., 79-2266; Ontario, alteration and metal distribution, 79-3492; RE and oxygen isotope systems, 79-3493

Hydraulic conductivity of soils, 79-100 Hypercinnabar, California, new phase in Hg-S binary, chem., X-ray, 79-2879

Hyperfine fields, measurement in laterite minerals, 79-1986

Ice, creep and crystallization, 79-3597

ICELAND, columnar basalts, magnetic susceptibility, 79-3079; RE distributions in basalt, 79-444; O isotope geochem. in siliceous volcanic rocks, 79-445; chem. variation in Tertiary lavas, 79-447; geomagnetic field reversals, 79-1940; fissure swarms and central volcanoes, 79-1056 (5.1); levyne, 79-4063; geothermal fields, 79-71 (11); aquifer chem. of geothermal systems, 79-1459; E, oceanic basalts, 79-1770; magnetostratigraphy, 79-1748; 1973 Heimaey lava, O isotope comp., 79-446; Helgustadir, calcite-zeolite occurrence, 79-1880; Reykjanes peninsula, petrol., 79-2951; basalt-seawater geothermal system, 79-2308; Skagi and Langiökull volcanic ICELAND (contd.)

zones, petrol. and structure, 79-2969; geochem. variations, 79-2970

Idaite, Namibia, compared with nukundamite, 79-2885

Idocrase, opt., 79-4329; boron content, 79-3781; France, in skarn, anal., 79-2767; Russian SFSR, 79-901; Japan, 79-2794; Quebec, origin of colour, 79-3356; California, Ce-rich, opt., X-ray, 79-4011; Montana, 79-4287

Igneous differentiation processes, 79-4194
— petrology, World data base, 79-4128

— rocks, chem. classification referred to mineral content, 79-1689; published analyses, 79-440; deep-sea, <sup>40</sup>Ar/<sup>39</sup>Ar studies, 79-1933; USSR, geochem., 79-1406; radioactivity, 79-2485

Ignimbrite, *Italy*, water solubility of "ignimbrite campana", 79-3651; *NW Sardinia*, petrol. and geochem., 79-2479; *New South Wales*, textures, 79-1760; *China*, petrogen. from *RE* and Sr isotope evidence, 79-3837

Ijolite, relations with ijolite and liquid immiscibility, 79-3620; *India*, from alkaline complex, 79-3249 (9)

Imogolite, synthetic tubular hydroxyaluminium silicate, 79-2014 (6.7);

Italy, with proto-imogolite in soil on volcanic ash, 79-1086

Illite v. mica

Ilmenite, 79-1370; electronic-structure model, 79-3395; overgrowths on cassiterite, 79-131; partitioning of Ti, Al with garnets, pyroxenes, 79-354; hematite-ilmenite solid solution, configurational entropy, 79-267; in U-bearing sandstones, 79-4071; deposits, 79-1168; Finland, microtextures and microintergrowths, 79-729; Norway, deposits, geol. and petrog., 79-1169; Scotland, ilmenite-magnetite geothermometry, 2835; USSR, 79-2465; from kimberlites, 79-721; Lesotho, in kimberlite, 79-4074; South Africa, nodule associations, 79-3233 (III.4, 6); association at Frank Smith kimberlite pipe, 79-4073; in kimberlite, 79-3233 (III.2); pyroxene-ilmenite intergrowths from kimberlites, 79-653, 3233 (III.8); India, hydrochloric acid leaching anal., 79-1158; New South Wales, 79-3233 (V.1); New Zealand, geothermometry, 79-4075; Ontario, in ferroaugite syenite, 79-2789; California, in soil concretions, 79-4275; New York, 79-2785; Virginia, 79-1741; alluvial placer deposits, 79-3497; Brazil, manganoan magnesian -, from carbonatite, 79-1626

-, picroilmenite, chromian, megacrysts from

kimberlite, 79-3233 (III.5)

—-type structure, MgGeO<sub>3</sub>, synthesis, structure, 79-3660

Ilmenorutile, 79-1628

Ilvaite, temp. dependent Fe<sup>2+</sup> → Fe<sup>3+</sup> electron delocalization, 79-2096; *Japan*, Mössbauer spectra and magnetic features, 79-3360; *Colorado*, 79-3113

INDIA, motion relative to Eurasia since Permian, 79-4394; charnockite and orthopyroxene-bearing 'granolites', 79-929; Deccan Trap basalts, immiscible liquid phases, 79-4170; Sr isotopes in kimberlite, 79-3815; metamorphic facies map, 79-1839; oxidized zone in Singhbhum copper belt, 79-1178; 79-1623; thermoluminescence of radio-

active ores, 79-2598; manganese deposits, 79-3432; fluorapophyllite, 79-2822; refractory clays, 79-3535; S, conglomerates from Archaean geosynclinal piles, 79-885; west coast, clay mineralogy of shelf sediments, 79-1096; continental shelf, surficial mineral deposits, 79-3485; Indian Shield, element distribution in crust and mantle during Archaean, 79-2445; Bokora coalfield, indialite, 79-2101; Bundelkhand area, glauconites from Lr. Vinahyam Semri sandstone, 79-688; Gopalpur, hydrochloric acid leaching of ilmenite, 79-1158; Himalayas, intracontinental subduction, 79-2909; Lr. Himalayan belt, hornblendegarnet-bearing lenses, 79-3039; NW Himalaya, Kulu, feldspars from gneissic rocks, 79-4052; Lesser Himalaya, deformation and tectonism of Mukhem area, 79-3248 (2); north Kanara, manganese ores, 79-3490; Lonar Lake water, geochem., 79-1467; Malwa Plateau, ground water in weathered Deccan basalt, 79-1466; Rakha Mines area, Hg in rocks and sulphide ores, 79-2470; Surghar Range, lithologic units in Kingriali formation, 79-883; Visakhapatnam, magnetic survey on charnockites, 79-4367

—, ANDHRA PRADESH, Garavidi, fluorian allanite, 79-2778; Eastern Ghats, pyroxenes from spinel pyroxenites, 79-2787; Khammam dist., fission track ages of biotites, 79-1953; Kondapalli, magnetic chromites, 79-726; Veldurthi area, geol. and geochem. of iron ores, 79-3489

---, ASSAM, Sonapahar, sapphirine-bearing rocks, 79-927

-, BIHAR, mica belt, catazonal granite plutons, 79-4150; Gaya, Barabar Hills, granophyres, 79-842; Singhbhum, metamorphism of pelitic rocks, 79-3249 (18); Gua, iron formations and deposits, 79-3488; Singhbhum-Keonjhar-Mayurbhanj region, Precambrian stratigraphy, tectonics, geochron., 79-13

-, GUJARAT, Dabka, heavy mineral and ecostratigraphic zonation, 79-884; Jalampura, Cu-bearing aventurine zeolite, 79-705; NW Kutch, industrial minerals and

prospects, 79-3536

THIMACHAL PRADESH, petrochem. of traps, 79-1403; Chaur peak amphibolite, 79-3249 (21); Himalaya, basic rock suites, 79-3249 (36); Lesser Himalaya, fossil records, 79-3248 (6); stratigraphy and structure, 79-3248; Simla Hills, Lesser Himalayan rocks, 79-3249 (32)

—, JAMMU AND KASHMIR, intrusive rocks, 79-3249 (17); facies, 79-3248 (4); petrochem. of traps, 79-1403; Gilgit agency, Thelichi, petrol. of area, 79-795; Himalayas, evolution of drainage system of Kud area, 79-3248 (12); Indus tectonic belt of Ladakh Himalaya, 79-3248 (3); Ladakh granite, polymetallic mineralization, 79-3487

—, KARNATAKA, pillow breccia from Chitradurga greenstone belt, 79-4316; tectonic environment of metabasalts, 79-1404; Hutti, petrogen. of gold and sulphide mineralization, 79-3523; gold mines, geol. and working methods, 79-3522

-, KERALA, zircon from beach sand, 79-

--, MADHYA PRADESH, thermoluminescence of carbonate rocks, 79-1870; *Jhabua*, Precambrian phosphatic stromatolites, 79-1440; *Maihar area*, silicified oolites of Bhander limestone, 79-4264; *Phutkapahar* bauxite deposits, 79-2007 (13)

—, MAHARASHTRA, Alibag-Srivardhan, Deccan trap volcanics, 79-841; Bombay, hydroxyapophyllite, 79-2822; yugawaralite, 79-2829; Manori-Gorai, metasomatized basalt xenoliths in trachyte, 79-4284; Dongari-Chorbaoli area, geochem. of amphibolites, 79-3871; Purandhar hills, uranium in Deccan basalts, 79-2486

—, MYSORE, ruby crystals, 79-3118; ferruginous soils, 79-2074; Allipur, ruby, 79-2427; Chitradurga mine, leaching of copper sulphide concentrates, 79-2165

—, ORISSA, Kalahandi, ijolite from alkaline complex, 79-3249 (9); Sukinda Valley,

nickel exploration, 79-3816

—, RAJASTHAN, dating and estimation of uranium in garnets, 79-3166; seismite in Precambrian rocks, 79-4393; Badnor, Delhi – pre-Delhi relations, 79-3038; Khetri copper belt, origin of sulphide deposits, 79-3520; textures from Saladipura pyrite-pyrrhotite orebody, 79-223; Morija-Banol iron ore deposit, geochem., 79-3249 (14); Rajpura, evolution of sulphide rythmites into tectonites, 79-3521; Udaipur, Precambrian phosphatic stromatolites, 79-1440, 4265; Zawarmala, deformation in Pb–Zn-bearing Precambrian rocks, 79-3486

---, SIKKIM, *Himalayas*, basic volcanic rocks in Lr. Gondwana sequence, 79-2907

—, TAMIL NADU, clay minerals in tropical soils, 79-114; Salem dist., beneficiation of magnesite, 79-2167; Tiruchirapalli, Kadavur igneous complex, 79-2937

—, UTTAR PRADESH, stratigraphy and structure of Lesser Himalaya, 79-3248 (5); structure of Kumaun Himalaya, 79-3248 (1); Pithoragarh, C isotopes in carbonate rocks, 79-1387; Nainital dist., ages of metabasites, 79-3249 (19)

Indialite, India, crystal structure, 79-2101

INDIAN OCEAN, tectonic evolution, 79-991; RE and Rb/Sr systematics of basalts, gabbro, anorthosite, 79-3827; stratigraphic position of Mn nodule field, 79-3457; Mn nodule prospecting, 79-3797; Kerguelen I., continental fragment of oceanic island, 79-3825; Réunion I., residual glasses in lavas and xenoliths, 79-4224

INDONESIA, Banda arc, geochem. of Cainozoic and Recent lavas, 79-459, 2490; origin of high. 875r/86Sr andesites, 79-460, 461; tectonic history, 79-4398; origin of Late Cainozoic lavas, 79-2490; Java, pistane in crude oil, 79-2546; Krakatau volcano, 79-69 (6); Molucca Sea, collision zone, 79-1775; Sulawesi and Timor, Mesozoic cherts on crystalline schists, 79-1776; Sumatra, main structural and magmatic features, 79-4151; comparison with Andes, 79-4152; palaeomagnetic evidence for rotation and northward drift, 79-4393; Uliasser Is., origin, 79-4397

Inesite, California, crystal structure, 79-1107

Infiltration measomatism, 79-278

Infra-red spectra, use in mineral identification,

Infra-red spectra (contd.)

79-1037; humic and fulvic acids, 79-3293, 3346; clays, 79-1077; effect of Al on 7 Å trioctahedral minerals, 79-2801; exchangecoupled Fe2+-Fe3+ pairs in mineral spectra, 79-3058; adularia, 79-1608; carbonate apatites, 79-1326; Fe and excess Ca in dolomite-ankerite series, 79-1638; role of Ti in synthetic Ti-garnets, 79-3697; estimation of kaolinite in sediments, 79-2024; kerogens, 79-2552; dimethyl sulphoxide absorbed on montmorillonite, 79-2048; muscovite, 79-1603; reduced nontronites, 79-3265; painite, 79-1143; pyrite, 79-4335; detn. of quartz in clay mixtures, 79-2014 (5.3); detn. of minerals in grinding wheel dust, 79-2258; scawtite, 79-344; sepiolite and palygorskite surfaces, 79-2014 (2.10); sodalite minerals, 79-4349; anhydrous sodalites, 79-1119

-techniques for volcano monitoring and

prediction, 79-2954

Inorganic compounds, empirical estimation of heat capacities, 79-2269

structures, bond lengths, 79-3349 (79)

Interstellar wind, influence on interplanetary environment, 79-71 (9)

-dust. new source of extraterrestrial material, 79-636

Iodine, detn. in geochem. samples, 79-1049, 3899

Ion exchange chromatography, trace element detn. in rocks, 79-1999

geochem. --- microprobe analysis, plications, 79-2001; exsolution lamellae in labradorite. 79-1614: Ni in olivine from pallasite meteorites, 79-3995; excess <sup>26</sup>Mg in Allende anorthite, 79-2713; Mg and Fe in lunar rocks and soils, 79-3966

Ionic compounds, structures and phys. props., 79-3349 (26)

IRAN, S Alborz, palaeomagnetism and ore mineralogy of basalts, 79-3085; Azerbaijan, Upper Eocene to Early Oligocene shoshonitic volcanism. 79-4196: Chahar Gonbad. porphyry copper deposit, 79-2458; geol. of Dasht-e-Arzhan graben, 79-3249; Dovez, hydromagnesite, 79-204; Nir district, Miocene volcanism, 79-1714

IRAQ, Kikuk oilfield, hydrogeochem., 79-2582; geochem. of Lower Fars carbonates, 79-2519; water flow in Zubair, and Rumaila oilfields, 79-2581

- IRELAND, early mineralogy, 79-983; granite emplacement, 79-1056 (3.7); ore mineralization, 79-1148; mineral deposits, 79-3232 (7); mineralization in fractured craton, 79-1056 (4.2); downward-excavating hydrothermal cells, 79-2174; Caledonide orogen, 79-771 (16); petrol. of Lr. Palaeozoic greywackes, 79-2996; SE, Early Caledonian dolerites, 79-829; E and SE, Upper Ordovician volcanic rocks, 79-2919; Gortdrum and Tynagh orebodies, clay concentrates from, 79-1946; Longford-Down inlier, Caledonian subduction, 79-
- -, GALWAY, Bunowen, pyrometamorphic rocks at dolerite plug contact, 79-1814; Connemara, metasomatism and geochem. of Dalradian metasediments, Cleggan, thermally overprinted Dalradian rocks, 79-4298
- -, MAYO, Erris Head, age of pre-Caledo-

nian rocks, 79-1945; Kinrovar schist, petrog. and structure, 79-1827; Ox Mis., semipelitic schists, 79-1056 (2.2)

, TIPPERARY, Silvermines orebodies, 79-

-, WATERFORD, Comeragh Mts., Devonian lavas, 79-857

-, WICKLOW, Avoca polymetallic sulphide deposit, 79-2158 (35)

NORTHERN IRELAND, lithostratigraphy of Chalk, 79-881; anal. of well waters, 79-492

-, ANTRIM, geol. of Giant's Causeway coast, 79-2898; Cushleake Mt., granodiorite intrusion, 79-1703; Knocklayd, 1788 "eruption", 79-1750

, ARMAGH, Slieve Gullion volcanic complex, dolerite and gabbros from, 79-4182

LONDONDERRY, Greys Town, carbonate nodules from lacustrine deposit, 79-1790

Irghizites, USSR, gas content and outgassing, 79-1749

Iridium, in Greek chromites, 79-1382; Cyprus, distribution in Troodos complex rocks,

IRISH SEA, Isle of Man-Cumbria, Quaternary sediments, 79-880

Iron, wet-chemical detn., 79-3207; hydrostatic compression, 79-1862; from basalts, absorption in Pt-containers, 79-246; heating effect and detn. of ferrous iron, 79-48; Fe3crystal-field determinations, 79-150; system containing Fe at reduced oxygen pressures, 79-2331; crystal-field spectra in terrestrial plagioclases, 79-702; structural role of Fe3+ in silicate melts, 79-2319; estimation in bauxite, 79-3211; magmatic trends on alkali-iron-magnesium diagrams, 79-1692; minimising loss in producing glass from rocks, 79-3578; removal during mixing of estuary water, 79-239; association with organic matter in anoxic pore waters, 79-1455; Devon, oxidation state in Littleham Mudstone formation, 79-1419; New Jersey, biogeochem. of bog iron, 79-2608

compounds and minerals, hydrostatic compression, 79-1863; iron (III)-EDTA complexes, protolytic props., 79-1316; Fe-Ti amorphous and crystalline phases in soil clays, 79-2034; iron sulphide, ZnS-type, 1st order transition and magnetic structure, 79-3349 (69); FeS, high-pressure phase - transitions, 79-3669; coprecipitation of Cd and Fe sulphides, 79-237; Quebec, sulphide formation in sediments, 79-3854; oxides, magnetic props., 79-4334; influence of Al on formation, 79-3258; oxygen chem. potential in Fe/FeO system, 79-2344; sulphate adsorption, 79-274; on kaolin surfaces, ESR studies, 79-2052; in soil clays, 79-3320; in soils and sediments, adsorption of Co and actinides, 79-2255; New Zealand, in soil samples, 79-2014 (6.8); ferric hydroxide-silica coprecipitate, point of zero charge, 79-3286; β-FeOOH, structural changes caused by radiation damage, 79-2132; Fe-Ti oxides, in Ubearing sandstones, 79-4071; Sweden, magnetic and chem. character, 79-4331; Brazil, 79-4076; Fe<sup>3+</sup> site preference in Mg Cr<sub>2</sub>O<sub>4</sub>-MgFe<sub>2</sub>O<sub>4</sub> series, 79-175; y-Fe<sub>2</sub>SiO<sub>4</sub>, electron density distribution, 79-138; ferrous silicates, soft X-ray spectroscopy, 79-139; stability of ferric phosphates, 79-

- deposits, Europe, book, Switzerland, geophys., 79-3514; India, 79-3488; geochem. data, 79-3249; Japan, Fe-Cu deposits, genesis, 79-3462; China, porphyritė-type, fluid inclusions and oreforming temp., 79-2212; Western Australia, jaspilite deposits, 79-1183; Alberta, oolitic deposit, min., 79-2216; Pennsylvania. Cornwall-type mines, 79-1196

-formations, Precambrian, origin of magnetite microstructures, 79-1311; effect of sea-water on RE patterns, 79-2448; geochem. distinctions among environmental types, 79-3800; metamorphosed, model in system Fe-Si-C-O-H, 79-489; Finland, RE elements in, 79-483; New South Wales, 79-3524; South Australia, age detn., 79-1958; Western Australia, 79-796; Greenland, O isotope comp., 79-490; Labrador trough, regional metamorphism, 79-1849; Arizona, 79-70 (4)

- micronodules, Tyrrhenian Sea, 79-423

-, native, Greenland, 79-2849, 4069; in volcanic intrusions, 79-812, 813

ore, AAS anal. of standard sample, 79-2614; Euro-standards, 79-2629; bulk comp. of IRSID iron ore, 79-2627; Finland, coronas in, 79-3024; Sweden, fission-track dating of apatites, 79-3149; Avon, 79-1881; Germany, reference standards, 79-2621; Yugoslavia, low-Mn, geol. and economic estimates, 79-3477; Libya, magnetite oöids from, 79-1204; India, geol and geochem., 79-3489; China, porphyry, zoning of country rock, 79-3798; protoliths from, 79-3043

precipitates, Finland, in ground-water dis-

charge, 79-428

Ironstones, oolitic, indicators of transgressions and regressions, 79-2990

Island arcs, oxygen isotope geochem. of rocks, 79-441; source indicated by Nd and Sr isotopic studies, 79-1408

Isocorite, Queensland, slag occurrence, chem., X-ray, 79-2854

Isotope geochem. and genesis of ore-forming fluid, 79-3462 (7)

Isle of Man v. British Isles

ISRAEL, thermal effects in oil shales, 79-3313; alkali basalts, 79-461; ages of Miocene-Pliocene basalts, 79-1007; basalt weathering, 79-108; Jordan Valley, S isotopes from surface waters, 79-1464; S Judean desert, dolomite bodies, 79-3002; Makhtesh Ramon, Na-alunite in Jurassic flint clays, 79-1236

ITALY, clinopyroxenes from potassic lavas, 79-3728; alpine lherzolites, 79-456; metamorphism in Bergell intrusions, 79-1832; bauxite deposits, 79-1233; imogolite in soil on volcanic ash, 79-1086; S, earthquakes and tremors in active volcanoes, 79-69 (3), central, origin of potassic volcanics, 79-69 (4); continental shelf, exploration, 79-3476; Abano region, sources and circulation of thermal fluids, 79-2569; Adamello massif, Sr and O isotopic comp. of rocks, 79-3808; Aeolian Is., Sr isotope and RE data, 79-69 (7); Alagna, manganese pyroxenoids and carbonates, 79-670; Albano, latiumite, 79-4058; Colli Albani, zeolites, 79-4064; Alpe

ITALY (contd.)

di Suisi, illite/montmorillonite interlayer mineral, 79-3299; Alps, lherzolite rocks, 79-922; Apennines, evolution of fracture zone, 79-3136; metamorphism in sedimentary sequences, 79-4309; Apuane Alps, basal schist series, 79-4312; Arno R., chloritic intergrades in Recent sediments, 79-3305; Balmuccia, phlogopite in peridotite, 79-2806; Bisignano geol. and petrol., 79-794; Bologna, serpentine minerals, 79-2812; Breuil-St. Jacques area, mineral parageneses of eclogitic rocks, 79-1833; Calabria, history and petrol. of deep crust, 79-3034; high-grade metamorphic carbonate rocks, 79-4314; Castelnuovo di Valdarno, bombiccite, 79-3431; Cava St. Anna, water solubility of "ignimbrite campana", 79-3651; Chiavenna, mafic-ultramafic complex, 79-4304; Cismon section, magnetic stratigraphy, 79-3140; Dolomites, dolomitization of Triassic carbonates, 79-1795; Euganean Hills, trachyte and rhyolite biotites, 79-685; Figline, babingtonite, 79-4026; Ivrea zone, S isotopes in sulphides and basic rocks, 79-1401; origin of Îvrea-Verbano basic formation, 79-4190, 4191; Latium, volcanic groups, evolution and petrogen., 79-858; isotope anal. of travertine deposits, 79-475; Sr in travertines, 79-2514; Latium, Sabatinian, and Alban volcanic areas, gravimetry and deep structure, 79-958; Lepontine Alps, microstructure and mineralogy of orthogneiss, 79-4311; garnet lherzolite, 79-921; Liguria, coexisting sodic and calcic amphiboles, 79-2799; blueschist-facies superferrian eclogites, 79-2563; peridotites, mineral and bulk-rock chem., 79-2924; radiolarites related to subjacent "oceanic crust", 79-2975; Alpine metamorphism of ophiolitic complexes, 79-4241; ophiolitic breccias, 79-4239; Ligurian Alps, ta-charanite from Voltri group, 79-672; Lipari and Vulcano, volcanic rocks, chem., 79-1402; Miniera Trentin, ktenasite, 79-2131; Mt. Argentario, metagabbros and metadiabases, 79-4313; Naples, volcanic risk map, 79-2956; Piedmont, St. Marcel, Mn-rich rocks, 79-1835; Piona, U-and monazite, 79-1460; Pizzo Th-rich Cervandone, tilasite, 79-4380; Roman volcanic region, leucite-bearing lavas, 79-1754; Sabatini volcanic district, U and Th content of pyroclastic rocks, 79-3809; Sezia zone, eclogitic minerals, 79-1834; O and H isotope comp. of eclogites, 79-486; Sezia-Labzo zone, bytownite, 79-2119; Sezia-Lanzo and Ivrea-Verbano zones, pedogenesis of soils, 79-38; Taranto, dating Quaternary sedimentation cycles, 79-1006; *Taro Valley*, interstratified chlorite, 79-103; chlorite alteration products, 79-1090; Tolfa Mts., deep minerogenetic fluid circulation, 79-1463; Tuscany, ammonium in thermal springs, 79-3884; Valdarno, neoautochthonous sequence, 79-4260; Val Fassa, Fe in heulandites, 79-1619; Valle de Frigido, garavellite, new mineral, 79-2877; Valle del Temperino, skarn-sulphide deposit, 79-3515; Vesuvius, role of water in 1944 eruption, 79-1752; one-locality minerals, 79-974; thomsonite, 79-4062; zoning in augite, 79-666; Voltri

group, blueschist-facies schistose rocks, 79-4240; fragment of continental crust, 79-4310; *Vulcano*, cannizzarite, 79-2134;

thermal gradients, 79-69 (8)

-, SARDINIA, Caledonian event in Variscan massifs, 79-771 (22); levyne, 79-4063; NE, age and history of metamorphic basement, 79-1951; Logudoro-Bosano area, ignimbrites and associated lava domes, 79-2479; Osilo, yugawaralite, 79-2830; Silius, baryte, 79-3118; Villasolto, Sb and W deposit, tectonics, 79-3516

—, SICILY, Mt. Etna, contrasting cinder cones, 79-4221; effusion rate and shape of lava flow-fields, 79-1753; melt inclusions in plagioclase phenocrysts, 79-2826; Adrano area, trachybasalt volcanics, 79-1709; Stromboli, volcanic activity, 79-69 (9);

IVORY COAST, microtektite strewnfield, 79-3999

Jade, Neolithic jade implements, 79-4023;
 glass imitation, 79-392; South Africa,
 British Columbia, electron microprobe,
 XRD, spectral studies, 79-3368; Taiwan,
 tremolite characterization, anal., opt., 79-391

Jadeite v. pyroxene

Jahnsite-whiteite series, nomenclature, 79-770

Jamaica v. West Indies

JAPAN, geothermal fields, 79-71 (11); ilvaite, Mössbauer spectra and magnetic features, 79-3360; garnets from scheelite skarns, 79-2765; coexisting sodic and calcic amphiboles, 79-2799; pigeonite in lavas, geothermometry, 79-2792; formation of Kuroko deposits, 79-3458; contact metasomatic ore deposits, 79-3462; glaucophane metamorphism and ophiolites, 79-2979; tin content of granitoids, 79-4285; S isotope comp. of granitoids, 79-2489; NH4 in biotite from metamorphic and granitic rocks, 79-4034; granitic rock correlation with country rock, 79-843; Sn in granitic rocks, 79-1070 (III.7); evolution of volcanic rocks of island arc, 79-462; geochem. of Nohi rhyolitic volcanic rocks, 79-2488; clay minerals in Daisen and Sambesan loams, 79-2072; development of cultured pearl industry, 79-401; SW, granitic magmas in Mo, W, Sn provinces, 79-1070 (III.15); NE, H<sub>2</sub>O contents in Quaternary magmas, 79-4200; Aso dist., particle-size anal. of Ando soils., 79-80; Dozen, Oki; Is., titan-biotite in quartz syenite, 79-2808; titan-phlogopite, 79-1605; levyne, 79-4063; Fossa Magna region, volcanic rocks, petrol. studies, 79-2939; Katakai-gawa area, orbicules in gneisses, 79-4319; Fuka, Bitchu-cho, structure of 79-2100; Kitakami Mts., rankinite, fluorine in granitic rocks, 79-2487; props. and mineralogy of andosols, 79-2075; Kuruma Pass, clinoptilolite, 79-172; Kyushu, orthoclase megacrysts in granite, 79-695; Maisushiro, "hot spot" helium in soil, 79-413; Mazé, erionite, 79-170; Osarizawa, anglesite, 79-1145; Ryoke belt, D/H ratios of hydrous silicates, 79-3782; Sakkabira, osumilite, 79-1594; San-in zone, biotites and hornblendes from granitic rocks, 79-686; Seikoshi mine, sector structure of adularia, 79-1608; Shirakawa-Toki-Okazaki transection, variation of

Cretaceous granitoids, 79-4201; Takato, reactions at gneiss/amphibolite boundary, 79-4286; Toyoma, interstratified chloritevermiculite, 79-2014 (1.8); Tsumo mine, tsumoite, new mineral, 79-2894; AKITA PREF., Ani mine, dendritic pyrite, 79-4092; Tamagawa, baryte, 79-1145; CHIBA PREF., Mineoka belt, titanaugite in ultrabasic picrite basalt, 79-2791; EHIME PREF., Iwagi Islet, sugilite, new mineral, 79-2892; Sazare mine, carrollite, 79-2859; FUKUI PREF., Hukusan volcano, hornblende megacrysts in andesite, 79-2796; FUKUOKA PREF., Kashii dist., tourmaline-chlorite rock with serpentinite, 79-904; Kita-Kyushu City, wollastonite associated minerals, 79-2794; FUKUSHIMA PREF., Gozaisho mine, manganberzeliite, 79-2838; GIFU PREF., Kamiota, C isotopes in graphite and carbonate, 79-1388; Tanakamiyama, masutomilite, Mn analogue of zinnwaldite, 79-2884; Tono mine, liebigite from Tsukiyoshi orebody, 79-756; HOK-Tsukiyoshi orebody, KAIDO, Hidaka Mts., manganiferous schists, 79-3044; Momijiyama, glauconites in sedimentary rocks, 79-2056; Tatehira, kanoite, new clinopyroxene, 79-4118; Toyoha mine, fluid-inclusions in sphalerite and quartz, 79-1211; Utonai, artinite, 79-203; HYOGO PREF., petrol. of Kannabe volcano group, 79-859; IWATE PREF., Hijikuzu mine, orthoericssonite, 79-2776; Waga-sen'nin mine, genesis of Fe-Cu deposits, 79-3462 (2); Noda Tamagawa mine, hausmannite, 79-4083; manganoan phlogopite-kinoshitalite series, 79-2805; Yakeishidake dist., dravite, 79-4013; KAGOSHIMA PREF., alteration of minerals in andesites, 79-116; Kushikino mine, pyrostilpnite, 79-2860; Maruo, mixed-layer illite-montmorillonite, 79-117; Shinyu, Na-rich alunite, 79-751; clay minerals in Shirasu deposits, 79-2060; Takakumayama granite, K-feldspars, 79-697; Yamada, Fe-rich beidellite-like mineral, 79-98; KOCHI PREF., clay minerals in landslide deposits, 79-2057; role of igneous activities in tectonic movement, 79-4202; Matsuo mine, sussexite, 79-734; KYOTO PREF., Hokkejino, kinoshitalite, 79-687; MIE PREF., Toba dist., vuagnatite, 79-4027; MIYAGI PREF., Aji islet, lavered structure in basic intrusive mass, 79-844; Kohoku gold, silver, copper ore deposits, 79-1182, NAGASAKI PREF., Hazami-cho, beidellite-type mineral, 79-97; NIIGATA PREF., Kuroiwa, zeolites, 79-706; OITA PREF., Hoei mine, kutnahorite and other carbonate minerals, 79-2864; OKAYAMA PREF., Fuka, schorlomite, 79-2766; rankinite and kilchoanite, 79-2775; cuspidine, 79-2784; OSAKA PREF., D/H measurements on biotite, 79-3783; SAGA PREF., Iwano, saponite and related thomsonite, 79-711; SHIGA PREF., Myophage, zonally-grown mica from granitic pegmatite, 79-2803; SHIKOKU, plagioclase-bearing granulite, 79-3045; acid volcanic rocks of Okanaro group, 79-930; Shiraga-yama, pyrrhotite from pelitic schists, 79-2848; SHIMANE PREF., Iwami mine, stevensite-like mineral, 79-691; SHIZUOKA PREF., olivine from

JAPAN (contd.)

Takayama picrite, 79-2750; Yaizu, amygdale chlorite, 79-4038; TOCHIGI PREF., Kuzu dist., bedded chert of Adoyama formation, 79-3004; YAMA-GUCHI PREF., Yanai dist., metamorphism and plutonism in Ryoke belt, 79-2523

Jarlite, Greenland, 79-4371

Jarosite, synthesis, 79-360; Russian SFSR, natrojarosite, 79-901

Jasper, Oregon, origin, 79-399

Jaspilites, Bulgaria, in Precambrian, 79-923 Jeffries acid oxalate treatment, particle-size anal. of Ando soils, 79-80

Jeremeyevite v, eremeyevite

Jet stream processes, Monte Carlo simulation, 79-531

Jimboite, synthetic, crystal structure, 79-3419 Jimthompsonite, Vermont, crystal chem., 79-2107

Jixianite, China, new mineral, anal., opt., X-ray, 79-2880

Journal of Earth Sciences Royal Dublin Society, new journal, 79-829

Journal of Structural Geology, new journal, 79-4147

JUPITER, atmospheric banding, 79-3125; magnetic field, 79-3236 (15); Galilean satellites, 79-71 (6)

Kaersutite v. amphibole Kainosite, Switzerland, 79-1894 Kaliborite, 79-199

Kalipyrochlore v. pyrochlore Kalsilite, nepheline-kalsilite system, subsolidus phase relations, 79-2419

Kämmererite v. chlorite

Kanoite v. pyroxene Kaolin, methods of investigation, 79-2014 (7.1); thermal transformation, 79-2014 (7.7); iron oxides on surfaces, ESR studies, 79-2052; detn. of dickite content by dilatometry, 79-1074; IR detn. in grinding wheel dust, 79-2258; France, 79-2163; Poland, origin, 79-107; South Africa, 79-2014 (7.2); Japan, 79-2057; Australia, 79-2014 (7.2)

--type minerals, desymmetrization, 79-3349 (4)

Kaolinite, 79-2418; crystallization conditions, 79-3262; rate process, 79-3263; XRD identification. 79-82; thermodynamic props., 79-2302; influence of hydrothermal process on, 79-3280; alteration, 79-362; structural changes on heating, 79-3383; 950°C exotherm in tropical soil clays, 79-3284; oxamyl adsorption on, 79-3296; membrane for salt sieving, 79-3283; reaction with salts, 79-93; 2014 (7.6); 79-2024; estimation in sediments, behaviour of pellets at elevated temps., 79-3276; 3D structures of kaolinite intercalates, 79-2029; ammonium propionate intercalation complexes, 79-1073; reactivity of ammonium-propionate-kaolinite intercalate, 79-1078; caesium sorption and desorption, 79-90; effects of micro-sized mixtures on props., 79-3274; interaction between L-glutamic acid and waterkaolinite system, 79-2046; titration of pHdependent sites in water, 79-3260; clayrock facies, 79-2058; Surrey, associated with montmorillonite, 79-2104 (3.7); Cornwall, release of Al, 79-3259; Czechoslovakia, crystallinity index, 79-2014 (7.4); Israel, kaolinite and metakaolinite organic associations, 79-3313; New Zealand, 79-1672; British Columbia, 79-120; Ohio, interstitial networks in pyrite framboids, 79-1807; Virginia, 79-1741

Kapillarite, South Africa, polycrystalline halite, 79-4262

Karst, USSR, in oil field sedimentary strata, 79-2560

Kasolite, 79-2772; Norway, 79-823

Kassite and hydrokassite, synthetic, opt., X-ray, 79-327

Keckite, Germany, new mineral, chem., opt., X-ray, 79-4119, 4373

Keldyshite, crystal structure, 79-2104

KENYA, green tourmaline, 79-2436; gemstones, 79-2439; magnetite morphology, 79-1623; Kerio Valley, trace elements in fluorites, 79-421; Kwale dist., schreyerite, new mineral, 79-2891; Rift Valley, Cainozoic structure and stratigraphy, 79-4223; melting in crust and upper mantle, 79-2900; Taita Hills, spessartine, 79-2769; S Turkana, pahoehoe and pillow lavas, 79-4222

Keratophyre, definition, 79-1825; Oregon and Idaho, petrogen., 79-1855

Kerguelen I. v. Indian Ocean

Kerite, replacing uraninite, 79-1384

Kerogens, characterization and evolution by IR, 79-2552; source indicators, 79-2558; pyrolysis, sterane/terpane ratio, 79-1434

Kerolite containing Ni, 79-2815

Kesterite, *Bolivia*, coexisting with stannite, chem., X-ray, 79-3406

Khademite, synonym for rostite, 79-4122 Khinite, Arizona, new mineral, chem., opt., X-ray, 79-1651

Kidwellite, Germany, 79-758; Alabama, 79-3117; Arkansas, 79-3119

Kilchoanite, Japan, opt., X-ray, 79-2775

Kimberlites, inclusions in, book, 79-3233; genesis, 79-3233 (II.10); dynamics of intrusion, 79-3233 (II.12); min. and S isotope ratios of associated sulphides, 79-3233 (II.5); mafic and ultramafic xenoliths from, 79-3233 (II.9); chem. of micas from, 79-2807; silicates from, cation ordering, 79-3349 (46); phase relations, 79-3644; compared with alnöitic breccia, 79-847; mineral assemblages in adjacent pipes, 79-855; USSR, related to olivine melilitite, .79-303; mineralogy of orthopyroxene from, 79-2786; genesis of pipes, 79-2932; Africa, peridotite and eclogite xenoliths from, 79-4005; Botswana, 79-2192; Lesotho, ultramafic nodules from, 79-670; India, Sr isotopic comp., 79-3815; Canada, ultra-mafic xenoliths from, 79-850; continental USA, review, 79-854; Colorado-Wyoming, megacryst assemblages in, 79-3233 (III.1); diamond in diatremes, 79-3541; IR detection, 79-4211

Kinoshitalite, Japan, anal., opt., X-ray, 79-687; Ba content, 79-2805

Kleemanite, South Australia, new mineral, chem., opt., X-ray, 79-2881

Kleinite, biaxiality, 79-938

Knebelite v. olivine

Knopite, West Germany, 79-963

Komatiites, Russian SFSR, petrochem. characteristics, 79-1696; Newfoundland, peridotitic and pyroxenitic, 79-2985; Ontario, lava flows, min. and chem. variation, 79-852; RE abundances, 79-466,

KOREA, contact metasomatic ore deposits, 79-3462

Kornerupine, crystal optics, 79-2781; synthesis and crystal chem., 79-1336, 3361; Zambia, in borosilicate rock, 79-2780; India, 79-927; Greenland, opt., 79-2428; Australia, from granulites, anal., opt., Xray, 79-658

Korzhienskiy's potential, chem., equilibria calculation in open systems, 79-2453

Köttigite, Germany, crystal structure, 79-3428 Koutekite, reflectivity and microhardness, 79-3065; France, 79-2856

Kraisslite, New Jersey, new mineral, chem., opt., X-ray, 79-1652

Krupkaite, 79-4096

Ktenasite, Italy, crystal structure, chem., 79-2131; Colorado, 79-3091

Kunzite v. pyroxene

Kurchatovite, Mn-, synthetic, crystal structure, 79-2128

Kuroko orebodies, Japan, 79-3458

Kutinaite, reflectivity and microhardness, 79-3065; France 79-2856

Kutnahorite, Switzerland, chem., 79-4104; Japan, chem., opt., X-ray, 74-2864

Kyanite, 79-3705; uniaxial compression, 79-3603; solubility in clinopyroxene and grospydite, 79-3723; reaction paragonite = jadeite + kyanite + H<sub>2</sub>O, 79-2385; Aberdeenshire, andalusite/kyanite isograd, 79-4295; Texas, 79-1812

Labuntsovite, crystal structure and water position, 79-3349 (49)

Lake Huron v. North America

Lakes, saline, Antarctica, stable isotope ratios, chem., evolution, 79-2525

Lampadite, France, 79-1887

Lamproites, Bulgaria, Nb and Ta geochem., 79-454

Lamprophyres, nature and origin, 79-1690; classication and nomenclature, 79-2913, 2914; New Zealand, petrol., 79-4203

Landfill leachate, Illionois, chem. quality and indicator parameters, 79-1263

Langbeinite, Germany, structure refinement, 79-3413

Langite, France, opt., 79-2861

Lanthanum compounds, in system La-Co-O, 79-325; LaAl<sub>11</sub>O<sub>18</sub>, X-ray, 79-2345; La<sub>3</sub>Ca<sub>3</sub>(BO<sub>3</sub>)<sub>5</sub>, crystal structure, 79-1142 Lapis lazuli, Baffin I., Precambrian meta-

evaporite, 79-432 Laponite, Na-, exchange of alkyl-ammonium

ions on, 79-2040 Lapparentite, Chile, identity with tamarugite,

79-4122 Lardalite-larvikite complex, Norway, struc-

ture, 79-1697

Laser emission spectroscopy, 79-2013 (1.2)

Laser Raman spectroscopy, 79-3559

Laterites, Re and W in profiles, 79-1383; behaviour of Ni, Co, Cr in, 79-2459; nickeliferous, element partitioning and distribution, 79-2199; measurement of hyperfine fields in minerals from, 79-1986; Greece, oolitic and pisolitic structures, 79-2007 (2); New South Wales, multiple surfaces, 79-1909; Queensland, extractive metallurgy, Laterites (contd.)

79-1159; New Zealand, on ultramaficgabbro association, 79-2082; Venezuela, AAS detn. of Ca and Mg, 79-1993

Latites, mineralogy, chem., 79-3231 (2) Latiumite, *Italy*, crystal chem., 79-4058

Laubmannite, Germany, 79-758

Lautarite, synthetic, crystal structure, 79-1130 Lavas, melting behaviour up to 35 kbar, 79-298; sequence and homogeneity based on thermal melting models, 79-3641; Iceland, Tertiary, chem. variation, 79-447; Isle of Mull, geochem., petrogen., 79-452; Ireland, Devonian flows, 79-857; Italy, leucite-bearing, differentiation, 79-1754; Indonesia, Cainozoic and Recent, geochem., 79-459; trace element and Sr isotope evidence on origin, 79-2490; South Shet-land Is., geochem., 79-2492; Idaho, basaltic, O isotope comp., 79-467; South America, plateau basalts, trace element, Sr. Nd isotope data, 79-2503; Peru, trace elements and genesis, 79-1415; RE abundances, 79-470

Lavendulan, Morocco, 79-3099; Western Australia, 79-757

Lavrovite v. pyroxene

Lead, in rock reference samples, 79-2613; high-pressure study, 79-3659; partitioning between volcanic glass and feldspar, 79-2500; pollution in agricultural soils, 79-3544; lead-clay sorption ratios, 79-1246; France, anomalies in soil, 79-3893; Northern Territory, in lateritic weathering profile, 79-502

— deposits, Pb-Ag deposits, France, 79-1199; Idaho, intrusion related deposits, 79-1197; Pb-Zn deposits, Switzerland, 79-3513; Alps, 79-2183, 2184; Russian SFSR, source of veins, 79-3484; Tunisia, bacterial stabilization, 79-1205; India, polyphase deformation, 79-3486; New South Wales, stratiform, 79-3525; British Columbia, 79-1223; Pb-Zn-Ag deposits, France, 79-3467

isotopes, anomalies in young zircons, 79-5;
 Norway, data from migmatites, 79-1442;
 Greenland, in Skaergaard intrusion, 79-1396;
 <sup>210</sup>Pb balance in Long Island Sound,

79-2532

— minerals and compounds, suspended in ocean waters, 79-2240; formation of sulphosalts, 79-1070 (IV.6); PbFC1 structure types, 79-216; ferroelastic transformations in lead orthophosphates, 79-2146

-, native, Greenland, 79-2849

Lead-zinc mineralization, Scotland, in basal Carboniferous rocks, 79-1170; Ireland, 79-1198

ores, SW England, fluid-inclusion data, 79-1150

Legrandite, Mexico, 79-3118

Lepidocrocite, sulphate adsorption, 79-274; Finland, 79-428; Ontario, in well-drained

soils, 79-3314

LESOTHO, structure of upper mantle, 79-838; lower-crustal granulites and eclogites, 79-3233 (II.4); formation of garnet lherzolite nodules in kimberlite, 79-3686; H<sub>2</sub>O migration in garnet peridotite, 79-3588; Pipe 200, ultramafic nodules, 79-3233 (II.7); oxide minerals in *Liqhobong* kimberlite, 79-4074; *Thaba Putsoa*, ultramafic nodules from kimberlite pipe, 79-669; exsolved pyroxenes, 79-3233 (III.3)

Leucite, 79-2418; sodium solid solution, 79-3751; thermal expansion and inversions, 79-2422; sodium in, petrogen. significance, 79-2423

Leucogranites, France, zonal petrog. variations, 79-1704; chem., comp. and mineral facies, 79-1705; associated with acid magmatism, 74-1070 (III.4)

Leucosphenite, crystal structure, 79-2120, 3382

Lherzolites, alpine, Sr isotope geochem., 79-456; geochem. of transition elements, 79-417; garnet-, Na<sub>2</sub>O control on melting, 79-3727; mineralogy, density, seismic velocity, 79-3233 (I.1); boron partitioning, 79-292; garnet-, spinel-, plagioclase-, stability fields, 79-2298; Norway, mantle-derived xenoliths and megacrysts, 79-4179; Italy, garnet-, petrogen., 79-921; Western Alps, petrochem. study, 79-922; South Africa, garnet-, mineral and bulk chem., 79-3233 (II.6); Pakistan, spinel phases from, 79-728; Solomon Is., garnet-bearing, 79-3233 (V.5); Canada, garnet-, 79-2942

Liandrite, *Madagascar*, new mineral, chem., opt., X-ray, 79-1654

Libethenite, crystal structure, 79-2138, 3424; Zambia, 79-3100

LIBYA, Sahara, impact structures, 79-605; Wadi Al-Shati iron ore, magnetite oöids from, 79-1204

Liddicoatite v. tourmaline

Liebigite, Japan, opt., X-ray, 79-756

Likasite, comp. and structure, 79-214

Limburgite, Russian SFSR, with ultramafic inclusions, 79-2933

Limestone, diagenesis based on Sr depletion, 79-1417, 1418; grindability, 79-1980; model for origin of chert in, 79-4249; Sweden, calcitized tephra, sedimentary sills, and micro-vents, 79-4217; Portugal, chem., 79-2512; India, silicified oolites from, 79-4264; South Australia, sedimentology, 79-1804; Arkansas, geochem. of Carboniferous units, 79-2535; Indiana, high-purity, 79-3450; North Carolina, Triassic, playa origin, 79-1811; Virginia, fenestral and associated vadose diagenetic fabrics, 79-895

Limonite, Virginia, after wood fossils, 79-4386

Limpopo belt v. Africa

Linarite, Greenland, 79-4098

Linströmite, crystal structure, 79-3408

Linear correlation, effect of variance dif-

ferences, 79-67

Liquid immiscibility, compositional dependence, 79-3624; SEM study, 79-3625; in fluor-silicate systems, 79-3626

Lithiophosphatite, synthetic, crystal structure,

Lithium, calculations of sites in crystal structures, 79-1101; in phlogopite structure, 79-2391; petrogen. of Li-rich pegmatites, 79-1694; *United Kingdom*, 79-1376; recovery from *Dead Sea* brines, 79-1237

— compounds, lithium hydroxide, electron distribution, 79-136; lithium nitride, defect structure, 79-3393; possible N³- ion, 79-1123; LiClO<sub>4</sub>.3H<sub>2</sub>O, LiClO<sub>4</sub>.3D<sub>2</sub>O, phys. props., 79-201; Li<sub>2</sub>SiO<sub>3</sub>, structure refinement, 79-154; Li<sub>4</sub>SiO<sub>4</sub>, crystal structure, 79-3349 (38); LiScSi<sub>2</sub>O<sub>6</sub>, structure refinement, 79-2106; LiScSiO<sub>4</sub>, crystal structure,

79-2091; lithium formate monohydrate, structure detn.,79-132

Lithosphere, ascending flow, 79-1771; lithosphere-mantle decoupling, shear heating explanation, 79-1878; South Pacific, flexure and uplifted atolls, 79-1926

Lizardite, Russian SFSR, 79-901

Loess, Merseyside, from Pleistocene, 79-4253 Löllingite, 79-329; France, 79-2856; USSR, chem. comp. and zoning, 79-748; Greenland, 79-2849, 4098

Lomonosovite, structure refinement. 79-2144 Lonsdaleite-graphite phase transformation, 79-2334

Loughlinite, reversible transformation to sepiolite, 79-2038

Löwigite, IR spectra, 79-945 Ludlamite, *Brazil*, 79-3121

Ludwigite, Russian SFSR, titanian, 79-901

Lunar studies, tidal stresses in Moon's crust, 79-525; planetesimal swarm subsequent to formation, 79-526; cross-section for accretional capture by Earth, 79-530; lunar magma ocean, thermal history, 79-551, 552; chem. evolution and crustal formation, 79-553; early melting, 79-543; deep seismic structure, 79-544; lateral inhomogeneities in interior, 79-545; thermal regime to 300 km, 79-546; possible metal core, 79-547; formation of the corona and atmosphere, 79-548; magnetic field intensity studies, 79-558; palaeointensity estimates, 79-559; intensity of ancient lunar fields, 79-561; magnetic field, cratered shell model, 79-563; interplanetary dust and solar flare fluxes, 79-569; solar proton fluxes, 79-568; impact phenomena on Apollo 12 sample, 79-572; orbital X-ray fluorescence data, 79-574; comp. from gamma ray data, 79-577; lunar spectral units, 79-580; farside tectonics and volcanism, 79-588; geochem., geophys. data, array processing system, 79-591; geologic-magnetic correlations, 79-592; regional variations in lunar maria, 79-594; internal friction quality factor Q, 79-596; electrical props. of drill core and soil samples, 79-600; early history of Earth-Moon system, 79-1485; magnetic losses in lunar materials, 79-1487; fission and devolatilization of Moon, 79-1488; cooling rates from phosphide exsolution, 79-1504; pre-final bombardment lunar evolution, 79-1524; textures in impact-generated liquids, 79-1526; system Fe-Cr-Ti-O, application to lunar thermometry, 79-1528; chem. comp. and immiscibility of silicate melts, 79-1530; shock veins in lunar and meteoritic samples, 79-1552; Luna 24 drill-core samples, radiation and thermal history, 79-2677; lateral homogeneity in lunar crust, 79-2681; Luna 24 highland component, 79-2693; petrol., chem., irradiation history of Luna 24 samples, 79-2704; U-Pb evolution in lunar mantle, 79-2705; Moon's magnetic field, 79-3236 (II); liquid immiscibility in synthetic lunar late-stage liquids, 79-3621; provenance of Apollo 15 deep drill core sediments, 79-3910; petrol., geochem. of lithic fragments, 79-3911; Apollo 16 deep drill core, 79-3812; depositional history, 79-3913; remanent magnetization history of cores, 79-3915; particle track densities in double drive tube, 79-3919; core 74001, maturity depth

Lunar studies (contd.)

profile, FeO, and metal, 79-3925; Apollo 17 core, mineral and lithic component, 79-3926; modal petrol. and glass chem., 79-3927; depositional history, 79-3928; chem. stratigraphy, 79-3929; geol. of Luna 24 landing site, 79-3932, characteristics of sample core, 79-3931; surface mass fractionation by solar-wind sputtering, 79-3963; effect of sputtering on solar wind element accumulation, 79-3964; Fra Mauro region, pre-Imbrium history, 79-3979; Imbrium Basin, Apennine Mts., geol. and relation to Apollo 15 site, 79-3981; Mare Crisium, low-altitude X-ray fluorescence data, 79-576; regional stratigraphy and geol., history, 79-2666; topography from Earthbased radar and Apollo mapping camera, 79-2667; nature of rays and sources of highland material, 79-2669; Mare Imbrium and Oceanus Procellarum, topography, structure, and mare ridges, 79-3976; Mare Serenitatis, volcanic vent eruption behaviour model, 79-3930; Oceanus Procellarum, contrasting styles of volcanism, 79-3977; radial thickness variations of Orientale basin ejecta, 79-524; Smythii basin, chem, character based on Al/Si orbital X-ray data, 79-575; Taurus-Littrow, cosmic-ray exposure history, 79-3920; transport and erosional processes, 79-3921

— age determination, <sup>39</sup>Ar/<sup>40</sup>Ar ages of lunar rocks, 79-1534; laser probe <sup>39</sup>Ar/<sup>40</sup>Ar dating of consortium breccia, 79-1549; K/Ar data, 79-1550; Apollo 16 breccias, 79-2658; radiometric age correlation, dating specific features, 79-3942; K/Ar dating of soils, 79-3978; ages of flow units in *Mare Crisium*, 79-3944; *Sea of Tranquility*, chronology and geneaology of mare basalts, 79-1505; *Shorty Crater*, cosmic-ray ex-

posure history, 79-3922

chemistry, Fe in plagioclase from soils and rocks, 79-514; rust alteration of Apollo 16 rocks, 79-515; charge-transfer and crystalfield spectra of Fe and Ti in basalts and synthetic glasses, 79-517; fractionation of osmium, 79-528, 529; bulk comp. and eucrite parent body, 79-535; bulk comp. and origin, 79-538-540; partition of W between metal and silicate, 79-539; geochem. evolution, 79-541; trace element chem. and early lunar differentiation, 79-554; temp. dependence of Fe<sup>2+</sup> crystal-field spectra, 79-584; orbital chem. compared with crustal thickness and sample chem., 79-590; geochem, of nitrogen and gases trapped in rocks, 79-1489; Apollo 12 mare basalts, 79-1490; S in mare basalts as function of bulk comp., 79-1493; Pb isotope studies of mare basalt, 79-1496; <sup>39</sup>Ar/<sup>40</sup>Ar study of Apollo 17 basalts, 79-1497; chem. of lunar samples and achondrites, 79-1531; noble gases in Luna 24 core soils, 79-2670; Luna 24 samples, chem. and Sr isotopic characteristics, 79-2703; chem. characterization of core 60010, 79-3916; chem. and optical props. at Apollo 15 and 16 site, 79-3953; major and minor element fractionation during agglutinate formation, 79-3954; surface carbon concentrations, 79-3960; solar wind nitrogen, isotopic evolution mechanism, 79-3961; Ca isotope fractionation, 79-3962; Mg and Fe in lunar

rocks and soils, 79-3966; volatile and non-volatile elements in soils, 79-3968; volatile trace metal lead in samples, 79-3970; effect of carbon on phosphate reduction, 79-3971; TiO<sub>2</sub> abundance map for northern maria, 79-581; Mare Crisium, chem. correlation with normal albedo, 79-2665; regional chem. setting for Mare Crisium, from Serenity to Langemak, 79-2664

- craters, basins and craters, comp. changes bombarding population, equipotential doming in flooded circular basins, 79-556; spectral classification of fresh mare craters, 79-582; pre-Imbrium craters and basins, 79-2658; effects of target characteristics on fresh crater morphology, 79-3939; apparent depth/diameter relation, 79-3940; lunar cratering flux, 79-3943; crater degradation and surface evolution, 79-3945; statistics of small craters, 79-3947; Copernicus, ejecta, hyper-ballistic transport models, 79-3937; secondary craters, topographic anal., 79-3946; crater density in Mare Crisium, 79-3944; Prairie Flat, cratering motions and structural deformation, 79-3938
- crust, origin of remanent magnetism, 79-564; Serenitatis and Imbrium impact melts, large-scale layering in crust, 79-557
- fines, solar cosmic-ray-produced noble gases and tracks, 79-566; photoconductive effects, 79-601; diffusion of rare gases from, 79-2651
- glass, in lunar breccia, 79-1551; anal., 79-1558; inclusion in Luna 24 olivine, 79-1560; structural features from crystalfield spectra, 79-2683; in Luna 24 core, 79-2684; Apollo 17 ropy glasses, 79-3924; from Luna 24 soil samples, 79-4358; Oceanus Procellarum, Ti-rich glass clod, 79-1556; Mare Crisium, agglutinitic glass chem., 79-2685
- minerals, opaque oxide crystallization in high-Ti mare basalts, 79-2648; ilmenite in basalts, 79-518; spinel, effect of thermal metamorphism on comp., 79-1554; mineral chem. in intrusive petrogenetic grid, 79-2698; spinel-ilmenite assemblage in TiO<sub>2</sub>rich basalts, 79-1503; olivines, absorption spectra, 79-585; inclusions, 79-1509; in coarse-grained basalt, 79-1494; Fe-Mg diffusion, 79-1501; zoned crystals in Apollo 15 rock, 79-523; oxide, metal, olivine mineral chem. in 14072, 79-1512; tranquillityite, 79-1513; Luna 24 olivine, high-Si glass inclusions, 79-1560; barred olivine "chondrules" in spinal troctolite, 79-1555; zoned pyroxenes, 79-520; crystallization of pyroxenes in Apollo 15 mare basalts, 79-511; pyroxene relations and genesis of rocks, 79-3973; crystallization in lunar crust, 79-1533; pyroxene-liquid interaction in quartz-normative basalt, 79-1500; clinopyroxenes and spinels, application of multivariate statistical analysis, 79-1486; crystal-field study of Fe<sup>3+</sup> in pigeonite, 79-521; inverted pigeonites from breccia, 79-1553; Luna-20 plagioclase, crystal-field effects and Fe content, 79-519; plagioclase, pyroxene, olivine clasts from breccias, 79-1515; pyroxferroite from Luna 20 anorthosite, 79-671; relationship between metal particles and phosphate minerals,

- 79-3972; Maria Crisium, opaque mineral chem. of gabbroic and basaltic fragments, 79-1561
- regolith, microcrater and solar-flare track maturation, 79-2673; Luna 24 site, nuclear particle tracks, 79-2675; cosmic ray track record and maturity, 79-2676; magnetic props. and carbon chem. studies, 79-2680; 90-150 µm fraction, remote sampling implication, 79-2682; surface structures, photomicrograph atlas, book, 79-3246; irradiation history of cores and development of regolith, 79-3918; data for regolith core, 79-3933; stratigraphic processes, 79-3949; dynamics based on anal. of <sup>22</sup>Na, <sup>26</sup>Al, 53Mm radionuclides, 79-3950; nitrogen in soils as measure of history, 79-3956; regolith history of 14307, 79-3980; Mare Crisium, geochem., petrochem., 79-3934 rocks, shock compression and adiabatic
  - release of titaniferous mare basalt, 79-394; highland basalt, experimental petrol., 79-507, 508; Apollo 15 basalts, crystallization and cooling history, 79-510; liquidus phase relations, 79-512; petrol. of Apollo 16 lunar highland rocks, 79-513; basalts, Ti and Al partitioning, 79-518; Apollo 15 high alumina basalt, melting experiment, 79-522; magnetization directions, magnetic fabric, oriented petrographic features, 79-560; He, Ne, Ar in sunlit and shaded surfaces, 79-570; impact microcraters on, 79-571; characterization of lunar mare basalt types, 79-582; acoustic attenuation of basalt, 79-595; compressional and shear-wave velocities, 79-597; petrol. of Apollo 12 ilmenite basalt suite, 79-1491; Apollo 12 mare basalts, Sr-isotopic constraints on petrogen., 79-1492; coarse-grained basalt 71597, 79-1494; very low Ti (VLT) basalts, 79-1495, 1558; cooling histories of Apollo 15 quartz-normative basalts, 79-1498; slowly-cooled metagabbros 15555 and 15065, 79-1499; crystallization of olivinenormative basalts, 79-1502; Apollo 17 TiO<sub>2</sub>-rich basalts, 79-1503; evolution of mare basalts and complexity of U-Th-Pb system, 79-1506; shock metamorphism of basalts, 79-1507; liquid line of descent of mare basalts, 79-1509; comp. variation in late-stage differentiates in mare lavas, 79-1510; redox states of Ti, Zr, Hf, Cr, Eu in basaltic magmas, 79-1511; Apollo 15 mare basalts, pattern recognition classification, 79-1514; Apollo 14 breccias, 79-1516; Apollo 15 black-and-white rocks, petrol., 79-1517; breccia rake samples, 79-1518; petrol. and geochem. of impact melts, granulites, hornfelses, 79-1519; crystalline matrix breccias from Apollo 17 rake samples, 79-1521; petrol. of early, thermally metamorphosed polymict breccia, 79-1522; feldspathic granulitic impactites, 79-1524; breccia, crystallization kinetics, viscous flow, thermal history, 79-1525; experimental melting relations, 79-1527; pristine non-mare rocks and nature of crust, 79-1532; SCCRV, major component of highland rocks, 79-1533; history of Apollo 17 station 7 boulder, 79-1535; breccia 68815, 79-1536; low-K Fra Mauro basalt, (LKFM), 79-1537; origin and evolution, 79-1539; KREEP petrogenesis, 79-1538;

Lunar studies, rocks (contd.)

origin of KREEP basalts, 79-1540: evolution of KREEP, petrol. evidence, 79-1541; melt immiscibility, 79-1542; origin of Fe-rich mare basalts, 79-1542; chem. variation and fractionation of KREEP basalt magmas, 79-1543; clasts from consortium breccia, 79-1545; aphanitic matrix and clasts in, 79-1546; chem. of ANT-suite and felsite clasts from consortium breccia, 79-1547; Rb/Sr systematics in clasts and aphanites from consortium breccia, 79-1548; plutonic rocks depleted in trace siderophile elements, 79-1557; high-Ti mare basalts, opaque oxide mineral crystallization, 79-2648; igneous, normative comp. and classification, 79-2652; highland melt-rock suite, 79-2653; mare basalt suite, 79-2654; redox state, 79-2655; Apollo 16 breccias, ages, comp., and excavation depth, 79-2658; mare- and mid-ocean ridge basalts compared, 79-2661; petrogen. of ferrobasalts, 79-2684; Luna 24 lithologies, 79-2686; origin of basalts, 79-2688; VLT mare basalts, mixing parent magma, petrogen., 79-2689; Luna 24 ferrobasalts and mare basalt suite, chem., mineralogy, petrol., 79-2690; basaltic fragments, mineralogy, petrol., 79-2691; basalt magmas at Luna 24 landing site, 79-2692; VLT basalts, experimental petrol., 79-2694; viscous flow, crystal growth, glass formation, 79-2696; lithic fragments, origin of VLT mare basalts, 79-2700; trace element constraints, 79-2706; magnetic and palaeomagnetic studies, 79-2707; 71135, 71569, exposure histories, 79-3923; solar flare exposure ages, 79-3951; Fe and Mg and microcraters in crystals, 79-3966; genesis related to pyroxene relations, 79-3973; Mare Crisium, gabbros, 79-1562; Luna 24 ferrobasalts, 79-1563; evidence for high-Mg subsurface basalt, 79-2663; cooling rates of basalts, 79-2695; chem., subophitic mineralogy, petrol. of >1 mm fragments, 79-2699; trace element comp. of Luna 24-VLT basalt, 79-2701; geochem., petrochem. features, 79-3934; mineralogy, petrog., 79-3935; Mare Humorum and Mare Nubium, basalt thickness and basinforming history, 79-555; North Ray Crater, Apollo 16 white boulder consortium samples, 79-1520; geochem. of white breccia boulders, 79-1529

soil, Luna 20, optical absorption studies, 79-509; Apollo 17 orange lunar soil, 79-516; particle track correlation studies, 79-567; maturity, 79-579; detection of soils of Fra Mauro basalt and anorthositic gabbro comp., 79-583; surface area and porosity characterizations, 79-602; anorthositic soil fragments, 79-1523; Apollo 12 KREEP soil sample, 79-1544; metallic phases in Luna 24 soil samples, 79-1559; anal. of Luna 24 soil, 79-1562; surface comp. of grains, 79-2649, 2650; diffuse reflectance spectra of Luna 24 soils, 79-2668; noble gases in Luna 24 core, 79-2670; FMR and magnetic studies, 79-2671; grain size and evolution, 79-2672; particle track densities, 79-2674; radiation damage and microstructure, 79-2678; clast population, 79-2679; Luna 24 lithologies, 79-2686; origin and modal petrog., 79-2687, 2688; melt inclusions in, 79-2697; chem. and petrol., 79-2700; noble gas and element distribution, 79-3908; carbon chem. and magnetic props., 79-3909; grain size, petrog., FMR studies of double core, 79-3914; noble gas evidence for history of core soils, 79-3917; neutron fluences, 79-3921; measurements on bulk soils, 79-3949; steady state, exposure age, growth of agglutinates, 79-3952; He, Ne, Ar records of evolution, 79-3955; nitrogen isotopes as measure of cosmic-ray exposure history, 79-3956; effects of soil maturation grainsize dependence of trapped solar gases, 79-3957; maturation to steady-state stage, 79-3958; concentration of fine-grained metals in, 79-3958; <sup>14</sup>C in, temperaturerelease and grain-size dependence, 79-3959; Mg and Fe and microcraters in crystals from, 79-3966; volatile and non-volatile elements, in grain-size fractions, 79-3968; volatile metal deposits on, 79-3969; K/Ar dating, 79-3978; Mare Crisium, agglutinitic glass chem. and soil development, 79-2685; major and trace element chem., 79-2702

surface, chem. imaging from orbital X-ray data, 79-573; Th concentrations, 79-578; surface chem., 79-589; correlation between remanent magnetism and chem., 79-593; comp., 79-2291; lunar surface alteration profiles, 79-3967

Lussatite v. opal

'LUST', Scotland, seismic refraction survey, 79-916

LUXEMBOURG, geol. of Grand Duchy,

Luxullianite, Cornwall and Devon, 79-1702

Mackinawite, Bulgaria, exsolution in chalcopyrite, 79-739; Australia, nickeliferous and cupriferous, anal., opt., 79-1631 Madagascar v. Malagasy Republic

Madelung constants, for millerite- and GePtype structures, 79-188

Mafic magmas, delay in olivine nucleation, 79-3608

- nodules, origin in igneous rocks, 79-2288 -ultramafic complex, Spain, geochem., 79-

3869; Italy-Switzerland, 79-4304 Maghagendorfite, new mineral, 79-2876

Maghemite, Greenland, 79-4070

Magmas, interaction with transmagmatic fluids, 79-409; chem. data and origin from mantle, 79-1395; mixing at mid-ocean ridges, 79-2973

Magmatic rocks, comp. dependence on alkalinity, 79-442

Magmatism, global magmatic episodes, 79-

Magnesia refractories, monticellite-spinel and periclase-liquid equilibria and bonding, 79-

Magnesiowüstite v. wustite

Magnesite, stability, 79-3689; crystallization kinetics from aqueous soln., 79-2362; grindability, 79-1980; magnesite-siderite series, opt. identification, 79-1971; India, beneficiation of ore, 79-2167; Brazil, 3120

Magnesium, insolubility in  $\beta$ -Si<sub>3</sub>N<sub>4</sub>, 79-1328; dynamic recrystallization, 79-3595; magmatic trends on alkali-iron-magnesium diagrams, 79-1692; distribution between olivine and silicate melt, 79-1281; AAS detn. in silicates and laterites, 79-1993; in continental runoff, 79-2575; removal from interstitial waters in reducing environments, 79-2065; in calcite from coralline alga, 79-1635

compounds, MgO, atomic charge density, 79-178; Mn<sup>2+</sup> diffusion in MgO, 79-322; (Mg<sub>x</sub>Fe<sub>1-x</sub>)O solid solution, elastic props., 79-319; MgCr<sub>2</sub>O<sub>4</sub>-MgFe<sub>2</sub>O<sub>4</sub> series, Fe<sup>3+</sup> site preference, 79-175; aqueous MgCl<sub>2</sub> in system MgO-SiO<sub>2</sub>-H<sub>2</sub>O-HCl, 79-3681; magnesium bicarbonate, stability of ion pair, 79-2360; magnesium carbonate, 79-2361; MgKPO<sub>4</sub>.6H<sub>2</sub>O, struvite analogue, crystal structure, 79-2142; MgMoO<sub>4</sub>. 5H<sub>2</sub>O, crystal structure, 79-206

Magnetic anomalies, anomalous behaviour of palaeomagnetic field, 79-1869; mineralogical constraints on Curie isotherms, 79-3082; France, 79-3468; Cavman Trough, 79-993; New Zealand, in schists,

79-3083

field generation in hypervelocity impacts, 79-565, 2264

- lineations, in Pacific Jurassic quiet zone,
- mineralogy, geol. applications, 79-959 — particles, separation, 79-39
- polarity stratigraphy, New Mexico. Chamita formation stratotype, 79-1968

— properties, iron oxides, 79-4334

remanence, separation of multi-component NRM, 79-960; in honey bees, 79-1904

- stratigraphy, Italy, 79-3140

--- structures, P-symmetry, 79-3349 (2)

- susceptibility, in-situ measurements, 79-4133; anisotropy, of basaltic bodies, 79-1868; in deep-sea sediments, 79-4363; losses in lunar materials, 79-1487; anistropy in Icelandic columnar basalts, 79-3079

Magnetism, British Isles, survey results, 79-3081; South Africa, geophys. exploration,

79-2158 (24, 25)

Magnetite, hydrothermal crystallization, 79-1066 (4); microstructures as guides to origin, 79-1311; isothermal compression, 79-3060; electronic-structure model, 79-3395; stratiform crystals of abnormal morphology, anal., 79-1623; in U-bearing sandstones, 79-4071; Sn-rich, from slag, 79-1331; solubility of univariant assemblage pyrite + pyrrhotite + magnetite, 79-2351; <sup>18</sup>O/<sup>16</sup>O partitioning with quartz, 79-2567; magnetite-liquid distribution coefficients for transition elements, 79-289; magnetite-ulvospinelss, configurational entropy, 79-267; Norway, 79-823; Finland, microtextures and microintergrowths, 79-729; Scotland, ilmenite-magnetite geothermometry, 79-2835; Portugal, 79-831; USSR, trace element distribution, 79-722, 2465; Russian SFSR, 79-3042; chem. nature, 79-723; Libya, oöids from iron ores, 79-1204; South Africa, reference ore sample, anal., 79-2603; Queensland, deposit drilling programme, 79-1213; New Zealand, 79-1672; geothermometry, 79-4075; Greenland, 79-4070; British Columbia, 79-2836; Ontario, in ferroaugite syenite, 79-2789; New York, 79-2785; Virginia, 79-1741

Magnussonite, Sweden, crystal structure, chem., 79-3417

Majorite, in Catherwood meteorite, anal., X-ray, 79-2718

Malachite, crystal structure refinement, 79-205; DTA, TG, 79-680; oriented transformation into tenorite, 79-2363; France, 79-1887; Greenland, Sb-, 79-4098

MALAGASY REPUBLIC, liddicoatite, new tourmaline variety, 79-395; blue sapphire, 79-1367; hydrous gem magnesian cordierite, 79-1593; beach formation exploration, 79-2225; Ampangabé, ampangabéite found to be euxenite, 79-2840; Antsakoa pegmatite, petscheckite and liandrite, new minerals, 79-1654

Malanite, China, new mineral, 79-1645

MALAWI, Kangankunde carbonatite complex, secondary strontianite, 79-1234; Mchinji area, hypersthene granites, 79-2927

MALAYSIA, weathering profile on granite, 79-115; Sarawak, Sarabu mine, sarabanite, new mineral, 79-1656

Manganberzeliite, *Japan*, chem., opt., 79-2838 Manganese, World production and trade, 79-3438; Mn<sup>2+</sup> diffusion in MgO, 79-322; MnO contents of lavas of alkali basalt series, 79-2477; partitioning between diopside and silicate liquids, 79-1283; in soil fractions, 79-3325; association with organic matter in anoxic pore waters, 79-1455; *Germany*, behaviour in acid soils, 79-89; *Italy*, Mn-rich rocks, 79-1835; *Chesapeake Bay*, impact of anoxia on Mn fluxes, 79-3550

— compounds, spectrometric anal. of Mn-bearing materials, 79-3218; MnF<sub>2</sub>, crystal structure and compressibility, 79-3684; manganese oxide, tunnel structures, 79-3396; in soils and sediments, adsorption of Co and selected actinides, 79-2255; oxygen chem: potential in Mn-MnO system, 79-2344; Scotland, oxides in tills, 79-2162

— concretions, growth rates, 79-2506; France, formation during freshwater and seawater mixing, 79-429; Atlantic Ocean,

new mineral phases in, 79-4084

— deposits, genetic types, 79-3432; New Zealand, 79-1390; western USA, from hot springs in chert-greenstone complexes, 79-2204; Brazil, 79-1226

— nodules, geochem. prospecting methods, 79-3797; on floors of Recent basins, 79-427; authigenic todorokite and phillipsite in, 79-1630; accumulation rates, alpha-track method, 79-1431; Tyrrhenian Sea, 79-423; Indian Ocean, genesis and prospecting, 79-3457; Pacific Ocean, geochem., 79-3796; electron microscopy, 79-426; exploration in North Pacific, 79-3436, 3437; British Columbia, effect of sediment-water exchange on growth, 79-1432; v. also ferromanganese nodules

ores, India, 79-349; South Africa, min. investigation, 79-2164

 precipitate, Finland, in ground-water discharge, 79-428

--- silicate rocks, metamorphosed, petrol., 79-4292

Manganochromite, South Australia, new mineral, chem., opt., 79-2882

Manganotantalite v. tantalite

Mansfieldite-scorodite series, *France*, 79-1887 Mantle, convection models, 79-71 (2); heterogeneity, 79-2974; implications of correlated Nd and Sr isotopic variations, 79-3803; advection and local isotopic comp., 79-3779; modelling of major elements in mantle-melt systems, 79-1278; metamorphism in model mantle, 79-3233 (I.2); diamond cell and nature of mantle, 79-3236 (14); implications for mineralogy of Si-O bonds at high P, 79-1270; hydrous, melting in, 79-301; role of CO2 in melting processes, 79-302; planetary, effect of H<sub>2</sub>O and CO<sub>2</sub> on, 79-2284; thermal domes heated by CO<sub>2</sub>-rich fluids, 79-3780; constraints on source comp. imposed by phosphorus and RE, 79-1379; circulation with partial shallow return flow, 79-1922; convection and thermal structure of plates, 79-3076; subsolidus convection, 79-3236; subsolidus 79-1310: ferroelectric-like curve, phenomena, 79-1337; thermal and electrical props., 79-955; geochem. implications of diffusion in basalt melt, 79-1294; element distribution during Archaean, 79-2445

--, upper, comp., 79-1378; partial melting and electrical conductivity anomalies, 79-1876; mineralogy review, 79-1691; metasomatism, 79-3233 (II.10); study by longperiod ocean tides, 79-4411; structure beneath Lesotho, 79-838; western USA, P

velocity structure, 79-1872

Marble, Finland, 79-2218; Poland, stable C isotope comp., 79-3872; Nevada, origin by replacement of gypsum, 79-491; New York, high Ca —, 79-3538

Marcasite, Sweden, 79-221; Greenland, 79-2849

Marine chemistry and geochem., 79-1453
— geophysics, application to *African* continental shelf, 79-3435

- organisms, elemental comp., 79-415

— placers, exploration, 79-3433; research on continental shelves, 79-3434

Marl, *Greece*, mineralogy and sedimentation environment, 79-4261

MARS, elastic energy and tectonic surface movements, 79-550; surface features, 79-603; impact structures, 79-605; ejecta blankets, 79-606; large channels, geol. significance, 79-608; origin of canyons, 79-618; regolith, Viking X-ray fluoresence experiment, 79-1564; cratering, chronology and implications, 79-2659; geochem. and mineralogical interpretation in, 79-1565; carbonate formations in Mars-like environments, 79-1566; volcanism in cratered terrain, 79-2656; possible sites of intrusions, 79-2657; altered glass as source of clay minerals, 79-2660; magnetic field, 79-3236 (11); volcanism in Noachis-Hellas region,

Marineris, structure pattern anal., 79-607 Marsturite, New Jersey, new mineral, chem., opt., X-ray, 79-2883

Labyrinthus-Valles

Nactis

Mass spectrometry, detn. of B in high-purity Al metal, 79-2003; detn. of Ba in geochem. standards, 79-2635; trace element data on geostandards, 79-2637; commissioning of AEI MS702 instrument, 79-2002

Masutomilite, *Japan*, Mn analogue of zinnwaldite, chem., opt., X-ray, 79-2884

Matulaite, *Pennsylvania*, new mineral, chem., 79-765 Maw-sit-sit, *Burma*, jadeite and albite mixture,

79-1359 Mcconnellite, *Guyana*, 79-4081

79-616;

MEDITERRANEAN, explosive volcanic activity over past 200 000 yr, 79-17; clinopyroxenes in ophiolitic metabasalts, 79-4020; karst bauxite genesis, 79-2007 (19); Mediterranean frameland, crustal pattern and mineralization, 79-1153; Tyrrhenian Sea, Mn and Fe micronodules from volcanic seamount, 79-423; volcanism and seismicity, 79-69 (2)

Megabar cell, design and varieties, 79-3560

Melilite and melilite-bearing igneous rocks, 79-656; melilite nephelinitic rocks, differentiation, 79-4172

-, åkermanite, phase relations, 79-2327; crystallization in system CaO-MgO-SiO<sub>2</sub>, 79-2371; åkermanite-diopside system, 79-2377, 2378; anorthite-åkermanite instability, 79-2409; absence of thermal minimum in anorthite-åkermanite-gehlenite, 79-2407; åkermanite-spinel instability, 79-2421; in rocks related to kimberlite, 79-303

Melilitites, formation, 79-2327; diopside-spinel equilibria and origin, 79-2292; *Tanzania*, melilitite-carbonatite tuffs, 79-2964; *Australia*, olivine-, 79-845

Melilitic rocks, classification and nomenclature, 79-2913, 2914

Melting at stress dislocations in earth, 79-304; melting-pressure curves, pressure-temp. anal., 79-1269

Meneghinite, natural and synthetic, structural difference, 79-3407; Cu-free, synthesis and crystal data, 79-2353

MERCURY, soil maturity, 79-579; surface features, 79-603; catalogue of large craters, 79-609, 611; distribution pattern of diameters, areas, perimenters, 79-610; craters in different physiographic provinces, 79-612; history of heavily-cratered terrain, 79-613; tectonic and volcanic history, 79-2662; magnetic fields, 79-3236 (11); effects of target characteristics on fresh crater morphology, 79-3939; crater degradation, 79-3945; cratering, physiographic units and evolution, 79-3948

Mercury, in fluvial bed sediments, 79-1245; in CRPG and ANRT rock and mineral standards, 79-3905; measurement in natural waters, 79-2251; India, in rocks and sulphide ores, 79-2470; New Zealand, in geothermal discharges, 79-2573; geochem. in Palas Verdes sediments, 79-1264; emission in Hawaii, 79-1256; anal. in Ottawa R. sediments, 79-3548; Montana, retention of vapour by soils, 79-2611; Ohio, in soil, 79-1261

— deposits, Turkey, 79-3479; SW China, tectonic system, 79-2196

mineralization, Czechoslovakia, associated organic minerals, 79-4068

— ores, Nevada, mineralogy, geochem., 79-1225

Merlinoite v. zeolite

Merumite, Guyana, found to be assemblage of chromium minerals, 79-4081

Messelite, Germany, in oil shale, 79-3090

Metabasalts, greenschist-facies, mixed volatile equilibria, 79-3737; from alpine-ophiolites, chem. data, 79-1400 Corsica, ophiolitic, RE and element distribution, 79-2478; India, tectonic environment, 79-1404

Metabasites, actinolite-hornblende series, 79-4028; *India*, K/Ar age, 79-3249

Metacinnabar, phase in binary. Hg-S, 79-

Metadolerite dyke, Norway, 79-2764 Metagranite, North Carolina, petrol. and regional significance, 79-1858

Metalliferous deposits, in sedimentary environments, 79-2151

Metallization associated with acid magmatism, book, 79-1070

Metallogeny, regional, theories, 79-3442

Metals, critical resources, 79-71 (14); uptake of traces by hydrous oxides, 79-2250; deposits related to hotspot rifting environments, 79-1160; Norway, in dated sediment core from fjord, 79-2246; Maine, binding capacity of surface waters, 79-2249

Metamorphic facies, India, map and description, 79-1839

petrogenesis, application of R-mode factor analysis, 79-4323

- processes, rates of, 79-2296

rocks, petrology, book, 79-73; uranium in, 79-482; Shetlands, 79-1826

- terrains, mineralization, book, 79-2158

Metamorphism, rate laws in, 79-2263 Metanorites, Italy, distinction from pyribolites,

79-4191

Metapelites, aluminous, melting reactions, 79-2328; USSR, anal., 79-1449; Maine, medium- to high-grade, muscovite comp. variation, 79-1602

Metapsammites, New York, age detn., 79-

Metarodingite, Switzerland, petrol. of eclogitemetarodingite suite, 79-4306

Metasediments, Ireland, regional metasomatism and geochem., 79-485; Pacific Ocean, K/Ar ages, 79-1010; Canada, metamorphism and deformation, 79-3051

Metasomatic reaction equations, 79-3586 -rocks, physicochem. conditions of formation, 79-255

Metazeunerite, Brazil, 79-3120 Meteorites,

Abee, 79-1572, 3984, 3986 Allende, 79-632, 640, 642, 645, 1568, 2708, 2710, 2713, 2722, 2723, 2725, 2735, 3986, 3989, 3990 Aroos, 79-3991 Aswan, 79-2720 Bencubbin, 79-622, 1573, 1575, 2715 Binda, 79-1553

Bishunpur, 79-2727 Boguslovka, 79-2716 Bondoc, 79-2733 Braunau, 79-3991 Brownfield, 79-2715 Catherwood, 79-2718 Chainpur, 79-2727 Chassigny, 79-2728 Chitenay, 79-2726 Cold Bokkeveld, 79-643,

2708, 2709, 2722 Coolidge, 79-2735 Dalgety Downs, 79-3987 Dhajala, 79-626, 1567 Dingo Pup Donga, 79-2714 Dyalpur, 79-2714 Eagle Station, 79-622, 3995 Emery, 79-2732 Enon, 79-622 Erakot, 79-2709 Estherville, 79-638, 2730

Goalpara, 79-2714 Granes, 79-2726 Groznaja, 79-1570 Guarena, 79-3990 Haverö, 79-620, 2714 Ipiranga, 79-1569 Itzawisis, 79-622

Ivuna, 79-2709, 2723

Kayakent, 79-3991 Kenna, 79-620, 2714 Kirin, 79-646-649, 2719 Klamath Falls, 79-2729 Kodaikanal, 79-2721 Krymka, 79-3986 Lodran, 79-622 Manych, 79 629 Mighei, 79-2708 Moama, 79-3983 Mokoia, 79-1570 Moore County, 1574, 3983 79-644. Mulga West, 79-2734 Mundrabilla, 79-2715 Murchison, 79-637, 643, 1571, 2708, 2709, 2722, 2734, 3992, 3993 Murray, 79-1570, 2708, 2722 Nakhla, 79-2730 Netschaëvo, 79-622 N'Goureyma, 79-3991 N'Kandhla, 79-2716 Nogoya, 79-2708 Norfolk, 79-2716 North Haig, 79-2714 Novo Urei, 79-2714 Odessa, 79-2730 Okabe, 79-631 Okahandja, 79-3991 Orgueil, 79-627, 640, 1570, 2709, 2723 Pasamonte, 79-644 Pontlyfni, 79-622 Richardton, 79-2727, 3990

Juvinas, 79-638 Kaba, 79-1570

Karoonda, 79-2735

Rittersgrün, 79-1576 Saint Chinan, 79-2726 Serrade Magé, 79-3983 Shalka, 79-639 Shaw, 79-2735, 3985 Sioux County, 79-639 Tieschitz, 79-2715, 2727, 3986, 3990 Tishomingo, 79-2724

Treysa, 79-3991 Udei Station, 79-1573 Verkhne Dneiprovsk, 79-Weatherford, 79-622, 1575 Winona, 79-622 Yamato, 79-620, 1553.

, in planetary evolution, review, 79-2647; differentiated, origin, 79-620; thermal metamorphism of primitive meteorites, 79-637, 2734; metamorphism in early solar nebula, 79-3993; equilibrium and disequilibrium condensation sequences, 79-634; iron and stony, genetic relationships, 79-622; condensation and comp. of iron meteorites, 79-1578; group IVA irons, cooling rates, 79-623-625, 3994; core origin, 79-625; pre-terrestrial history, 79-2711; anal. of ablation debris from irons, 79-2716; cosmic-ray-produced nuclides in irons, 79-633; primary element fractionation, 79-2731; metamorphic history of LL-group ordinary chondrites, 79-630; refractory-element-rich inclusions in CM meteorites, 79-2708; Rb-Sr studies of C1 and CM chondrites, 79-2709; RE abundances in chondrites, 79-2725; boron partitioning, 79-292; volatile loss kinetics, 79-3986; rims Ca-Al-rich inclusions in carbonaceous chondrites, 79-635; rare-gas-rich separates from, 79-2722; shock veins in lunar and meteoritic samples, 79-1552; quench temps. of eucrites, 79-1574; melt/solid segregation, 79-2717; genesis of howardites, diogenites, eucrites, 79-639; silicate spherules from deep-sea sediments, 79-1579; laboratory polarimetry, 79-586; thermal history of Abee enstatite chondrite, 79-1572; Allende, magnetic props., 79-645; high-temp. heating, 79-1568; formation of Bencubbin polymict meteoritic breccia, 79-1575; cosmogenic radioisotopes in Dhajala, 79-626; Mössbauer study of Kirin meteorite shower, 79-649; mineralogy, petrol., 79-2719; droplet chondrules in Manych chondrite, 79-629; thermal transformations in Orgueil carbonaceous chondrite, 79-1570; nuclear tracks in Pasamonte and Moore Co., 79-644; microstructure of Tishomingo, 79-2724; Verkhne Dneiprovsk, metallographic study, 79-2721; France, 79-2726: hypersthene chondrites, Antarctica, Yamato, new ureilite, 79-620; Brazil, Ipiranga chondrite, 79-1569

-, age determination, chondrite exposure age based on spallogenic 53Mn, 79-2733; 87Rb/87Sr chronology of H chondrites, 79-3990; Rb/Sr isochron and initial 87Sr/86Sr for Estherville, 79-638; fissiontrack records of Estherville, Nakhla, Odessa, 79-2730; age and evolution history of Kirin, 79-648

-, chemistry, trace elements in shergottite meteorites, 79-2712; volatile elements in 79-2735; chondrites, isotopically anomalous noble gases in carbonaceous chondrites, 79-2737; chem. of lunar samples and achondrites, 79-1531; rare gases trapped during condensation of solids, 79-3998; trapped noble gases in ureilites, 79-2714; trace element distribution between chondrite portions, 79-621; <sup>26</sup>Al in iron meteorites and cosmic-ray intensity, 79-3991; boron conc. in carbonaceous chondrites, 79-2723; Cd isotopic abundances, 79-2715; ancient carbon and noble gas fractionation, 79-641; irons with low Ga and Ge concentrations, 79-2729; K and Ca isotopes in magnetic spherules, 79-4000; cosmic-ray-produced 53Mn in meteorites, 79-1573; Sm isotopic anomalies, 79-2710; Ti, Zr, Hf in stony meteorites, 79-3984; U and Th microdistributions in stony meteorites, 79-2736; anomalous Kr in Allende, 79-642; noble gases, C, and S in, 79-3989; <sup>26</sup>Al in Dalgety Downs, 79-3987; in Kirin, 79-647; trace elements in Murchison, 79-637; oxidation state of Fe in orgueil, 79-627; noble gases in, 79-640; chondrules from Richardton, 79-2727

-, craters, Sweden, granite/sandstone contact, 79-4001; Germany, Ries, zeolitization of glasses in suevite, 79-1581; Switzerland, 79-4002; USSR, Zhamanshin, tektites, impactites compared, 79-1580; Ukraine, planar elements in biotite from shock-metamorphosed rocks, 79-650; South Africa, 79-2158 (6); Canada, Haughton astrobleme, 79-1584; Palaeozoic impact crater, 79-4003; Quebec, Manicouagan, 79-2740; stratigraphy, petrol., chem., 79-2741; chem. interrelations with basement, 79-2742; petrogen. of melt rocks, 79-2743; thermal history, 79-2744; Rb/Sr isochron age, 79-2745; central magnetic anomaly, 79-2746; gravity study, 79-2747; Arizona, Barringer, 79-70 (12)

-, falls, Ivory Coast, microtektite strewnfield, 79-3999; Antarctica, 79-3996

-, minerals, review, 79-3997; kamacite, 79-2720; model of regular kamacite-taenite intergrowths, 79-1577; Fe-Ni sulphides in Murchison, 79-3992; schreibersite growth Emery mesosiderite, 79-2732; whitlockite, spallation recoil tracks, 79-628; anal. of olivine and pyroxene, 79-646; olivine, augite, plagioclase in Shaw, 79-3985 in type 2 carbonaceous chondrites, 79-1571; anal. of Ni in pallasitic olivine, 79-3995; olvine from Murchison and Cold Bokkeveld, particle tracks and noble gases, 79-643; ringwoodite, majorite, olivine, pyroxene in Catherwood, 79-2718; pyroxene crystallization trends in achondritic crusts, 79-1553; pyroxenes in Serra de Magé, 79-3983; amphibole in Chassigny, 79-2728; Allende anorthite, excess <sup>26</sup>Mg in, 79-2713; mineralogy of heated Murchison, 79-2734; mineralogy of Okabe, 79-631

-, petrology, petrogen. relationships among achondritic meteorites, 79-3988; chondrules Richardton, 79-2727; heated from Murchison, 79-2734

Methane, C isotope exchange with carbon oxides at high-T, 79-2286; USSR, formation and migration, 79-1475

-producing bacteria, fractionation of stable isotopes, 79-2589

MEXICO, inclusions in agate, 79-402; clay deposits, 79-2014 (5.6); andesitic and alkaline provinces, 79-1743; Baja California, coastal submarine hydrothermal activity, 79-1393; geochem. of ultramafic xenoliths, 79-3233 Chiapas, amber and fossil resins, 79-1643; Chihuahua, gem peridot and enstatite, 79-1356; El Sombrete, Guadalajara City, volcanic risk map, 79-2956; Guanajuato, MEXICO (contd.)

hydroxyapophyllite, 79-2822; *Mapimi*, *Durango*, baryte structure refinement, 79-3411; *Moctezuma* gold mine, burckhardite, 79-4113; *Ojuela mine*, legrandite, 79-3118; *Sonora*, geol. of *Pinacate* volcanic field, 79-70 (2); phenocrysts and megacrysts in basaltic lavas, 79-2967; *Texcoco*, Na<sub>2</sub>CO<sub>3</sub> and NaCl content of clays, 79-85

Meymechite, crystallization temps. of minerals, 79-2916

Miargyrite, 79-331

Mica, survey of group, 79-682; crystal chem., 79-2109; classification of Mg-Fe and Li-Fe micas, 79-681; two-mica reference samples, anal. data, 79-3903; number of distinct polytypes, 79-3340; cation-apical oxygen vibrations, 79-2110; layer deformation and crystal energy, 79-1111, 3377; disordered structures, electron microscopic study, 79-1114; infrared T-O stretching band frequencies, 79-156; microblocks and sub-microblocks in, 79-3349 (60); micaamphibole reaction, 79-2107; iron oxidation during expansion, 79-2014 (1.1); K-depleted, metallic silver formation and iron oxidation, 79-2014 (2.8); end products of thermal decomposition, 79-3349 (74); alteration of surfaces by water and solutions, 79-2031; alteration during microbial formation of basic ferric sulphates, 79-360; from kimberlites and xenoliths, chem., 79-2807; props. of interstratified mica-vermiculite, 79-95, 96; fibrous silicate with mica-like structure, 79-2395; sodium trioctahedral mica, possible new rock-forming silicate, 79-4126; trioctahedral, comp. limits, 79-1340; fluormicas, hydration and dehydration, 79-94; fluortetrasilisic, interlayer water molecule arrangement, 79-3378; France, (Fe, Mn, Mg) tetrasilisic potassium mica, chem., X-ray, 79-2804; Italy, from eclogites, 79-1833, 1834; Nigeria, 79-836; Zambia, cupriferous, 79-690; Lesotho, 79-3233 (II.4); Japan, from granitic pegmatite zonally grown, 79-2803; Ontario, in soil, morphological features, 79-2071; Idaho, behaviour of Rb and Sr in, 79-30; Maine, in granitic rocks, hydrothermal alteration, 79-2499; Pennsylvania, preferred orientation, 79-3049

, biotite, distribution of octahedral ions, 79-2014 (1.2); infra-red spectra, 79-3058; optical absorption bands, 79-3379, 3380; biotite-apatite geothermometer, 79-1341; <sup>39</sup>Ar/<sup>40</sup>Ar response to tectonic events, 79-1950; thermal treatment, 79-306; melting reactions in aluminous metapelites, 79-2328; correlation of Mg/Fe partitioning with garnet, 79-2567; sulphidation of synthetic biotites, 79-3739; behaviour of Be during weathering, 79-2068; Norway, 79-823; Scotland, 79-4181; Fe/Mg distribution with garnet, 79-3028; role in diagenesis of red beds, 79-2991; France, weathering in granites, 79-2014 (4.9); Portugal, 79-831; Italy, trachyte and rhyolite biotites, 79-685; Russian SFSR, 79-902, 3042; Ukraine, from metamorphosed rocks of meteoritic craters, 79-650; South Africa, in granulites, 79-2158 (10); India, fission-track ages, 79-1953; Japan, 79-3044; from granitic rocks, chem., 79-686; D/H measurements, 79-3783; metasomatic titan-biotite in quartz syenite, anal., X-ray, 79-2808; ammonium in, 79-4034; Hawaii, barian-titanian biotites in nephelinites, 79-4035; New South Wales, 79-3233 (V.1); Queensland, 79-1846; Greenland, 79-818; British Columbia, hydrothermal alteration, 79-232; New-foundland, from basement rocks, age, 79-1024; Northwest Territories, F/OH ratios, 79-4032; Ontario, release of Al, 79-3259; USA, from tuffs in Eocene rocks, age detn., 79-3182; California, in altered granodiorite, 79-1822; Massachusetts, 79-2774; Peru, of magmatic and hydrothermal origin, 79-2809

-, clintonite, Fe<sup>2+</sup> and Fe<sup>3+</sup> from Mössbauer spectra, 79-3381; *Montana*, 79-4287; *New York*, 79-3107

-, hydrobiotite, reaction with ammonia, 79-

-, hydromuscovite, Brazil, 79-1902

—, illite, 79-2418; diagenesis in argillaceous sediments, 79-104; release of Al, 79-3259; synthetic, in system K<sub>2</sub>O-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>— H<sub>2</sub>O, 79-2014 (4.7); acid-leached, Rb/Sr systematics, 79-2032; Na-, adsorption of polycationic Fe(III) species, 79-2039; Spain, crystallinity in Hg deposit, 79-1836; Italy, illite/montmorillonite interlayer mineral, 79-3299; Japan, mixed-layer illitemontmorillonite, 79-117; British Columbia, 79-120; Virginia, 79-1741

-, lepidolite, 79-2884

—, margarite, New Zealand, in anorthosite, amphibolite, hornblendite, 79-3047

-, muscovite, hydrogen position, 79-3349 (48); dehydration reactions, 79-2394; phase transformation on heating, 79-3349 (77); high-temp. heat capacity, 79-3558; boron content, 79-3781; release of Al, 79-3259; IR spectra, 79-1603; in metamorphic rocks, *P*<sub>5</sub>-μH<sub>2</sub>O diagram, 79-2565; *Norway*, 79-823; *Pakistan*, Cr-muscovite in aplite, 79-903; *New Zealand*, 79-3047; *Maine*, comp. variation in metapelites, 79-1602; from two-mica adamellite, 79-1604; *Rhode I.*, cross muscovite and cross chlorite fibrous intergrowths, 79-4033

-, paragonite, 3T-, crystal structure, 79-1112; reaction paragonite = jadeite + kyanite + H<sub>2</sub>O, 79-2385; SW Africa, formation and breakdown in pelitic rocks,

79-684

---, phengite, *Peru*, 79-2809

-, phlogopite, lithium in structure, 79-2391; Ca-bearing, synthesis and solid solubility, 79-2392; solid-solution between trioctahedral end-members, 79-2393; phase transformation on heating, 79-3349 (77); distribution of octahedral ions, 79-2014 (1.2); Fe<sup>2+</sup>, F, OH distribution in octahedral sheet, 79-3376; prepn. of organosilicate compounds from, 79-3257; titaniferous, 79-3233 (II.10); behaviour of Be during weathering, 79-2068; fission-track etching and annealing, 79-1952; Na, Rb, Tl distributions with sanidine, 79-1276; trace elements and Sr-isotopes in, 79-1394; stability in presence of mantle phases, 79-359; tetriferriphlogopite, crystal structure refinement, chem., 79-1113; Italy, in peridotite, 79-2806; USSR, barium -, chem., 79-683; Russian SFSR, 79-901; South Africa, nodules in kimberlite, 79-12; Japan,

amygdale titan-phlogopite, anal., opt., 79-1605; manganoan, Ba content, 79-2805; New Zealand, 79-3047; Brazil, manganoan, 79-1226

-, sericite, direct observation of 2M, polytype, 79-2111; experimental transformation into rectorite-type mixed-layer mineral, 79-2028; Japan, from landslide deposits, 79-2057

—, zinnwaldite, 79-2884

Michenerite, Western Australia, chem., 79-4097

Microcalorimeter, for measurement of difference between two heat effects, 79-2280 Microcline v. feldspar

Microlite, Western Australia, 79-3101

Microorganisms, experimental silicification, 79-1906

Microscopy, book, 79-1065; thin section —, book, 79-2005

Migmatites, Norway, 79-911; Nd, Sr, Pb isotope data, 79-1442; France, petrogen., 79-3031, 4299; Washington, genesis of Skagit gneiss migmatites, 79-1851

Milarite, crystal structure, 79-2120; Switzerland, 79-1893, 1894

Millerite, transition-metal bonding, 79-3402

— -type structures, Madelung constants, 79-188

Mimetite, France, 79-1887

Mineral deposit geology, teaching, 79-3463; prospecting and exploration, book, 79-1062

— formulae, computer derivation from chem. analyses, 79-56

Mineralogy, Klockmann's Handbook, 79-3244; classical techniques, 79-1989

Mineralization and plate tectonics, 79-2149; kinetics, constant comp. approach, 79-253 Minerals and mineral products, 79-76

Minettes, New Brunswick, RE and trace element contents, 79-2497

Mining geostatistics, book, 79-3237; and mineralogy, book, 79-3240

Mississippi-Valley type deposits, genetic models, 79-1161; Canada, stratigraphic and tectonic control, 79-1193-1195
Mitridatite, Ethopia, authigenic, chem., 79-

4107

Modderite, USSR, anal., opt., 79-746

Molasse basins, tectonic setting and synedepositional deformation, 79-1661

Mollusc shells, diagenetic changes in elemental comp., 79-3840

Molybdenite, Switzerland, 79-4376, 4378; Greenland, 79-2849

Molybdenum, adsorption and extractibility from soils, 79-3322

— deposits, related to granitoid formation, 79-1070 (II.3); France, 79-3801

— disulphide in "rag" structure, 79-3409 Monazite, *Italy*, U- and Th-rich, anal., opt., X-ray, 79-1640; *Austria*, 79-1897; *Switzerland*, 79-1893, 4376; *Virginia*, 79-1741

Monetite, synthetic, crystal structure, 79-208 MONGOLIA, Sn and W deposits, 79-1070 (II.1); Cainozoic volcanic rocks, petrol. and geochem., 79-2934; Haan Höhey Range, P-T distribution during metamorphism of Precambrian rocks, 79-3040; Khan-Taishir ophiolitic complex, 79-868

Monomeric silicic acid, interaction with Cu and Zn, 79-272

Montebrasite, X-ray estimation of F, 79-1083; Western Australia, 79-3101

Monte Carlo study of crystal-melt interface 79-3349 (54)

Monticellite, crystallization in CaO-MgO-SiO<sub>2</sub> system, 79-2371; monticellite-spinel equilibria and bonding in magnesia refractories, 79-2370; forsterite-monticellite solid soln. limits, 79-2368; equilibria, 79-2369; *Italy*, monticellite marble, 79-1854; *Russian SFSR*, 79-901

Montmorillonite v. smectite

Monument rock alteration in natural environment, 79-2257

Monzonite, Western Australia, hornblendebearing, 79-1716; monzonitic pluton, 79-1717; California, alkalic, 79-2948; model for magmas, 79-2949

Moon v. lunar studies

Mordenite v. zeolite

MOROCCO, alpine lherzolites, 79-456; Caledonian-Hercynian segment, 79-771 (24); diagenesis stages in Bajocian Zerhoun sandstones, 79-1796; Bou Azzer, mineral locality, 79-3099; Camp Berteau, montmorillonite, 79-2045; Zeida-Bou Mia, Pb ore deposits, 79-3478

Mössbauer spectra, high-pressure phase transitions in FeS, 79-3669; iron oxides in soil clays, 79-3320; in New Zealand soils, 79-2014 (6.8); transformation of hematite to goethite, 79-3321; hematite particles in siderite, 79-1637; <sup>57</sup>Fe in ferrocarpholite, 79-2108; ilvaites, 79-3360; warwickite, 79-1141 Fe2+ and Fe3+ distribution in grossular, 79-2098; in clintonite, 79-3381; Fe<sup>2+</sup> in pyroxenes, 79-148; synthetic pyroxenes, 79-152; Fe<sup>3+</sup> in clinopyroxenes, 79-149; cooling history of hypersthenes, 79-2960; C2/c and P2/n omphacites, 79-2383; calcic amphiboles, 79-3372; synthetic Mg-Fe richterites, 79-155; chlorite and decomposition products, 79-2014 (1.6); reduced nontronites, 79-3265; Fe-rich phases in montmorillonites, 79-1081; yoderite, 79-1590; magnetic props. of Greek bauxites, 79-2007; thermal transformation in Orgueil carbonaceous chondrite, 79-1570; Kirin meteorite shower, 79-649

Mossite, 79-1628; Western Australia, 79-3101

Mottramite, France, 79-1887

Motukoreaite, crystal structure, 79-2343

MOZAMBIQUE, Mesozoic magnetic lineations, 79-4362; chronology of events in Mozambique belt, 79-3160; Morrua, gem manganotantalite, 79-3766

Mudrocks, detn. of feldspar using XRD, 79-1981

Mudstone, Barbados, lime-, diagenesis, 79-3017

Mullite, domain structure, 79-3359

Mylonite, France, 79-4147; Western Australia, fabric and texture study, 79-1841

Nambulite, Namibia, anal., opt., X-ray, 79-2810

Namibia v. South West Africa Nappe complex, Norway, 79-909

Neodymium isotopes, in andesites and plateau lavas, 79-2503; evidence for crustal contamination of continental volcanics, 79-2476; indicator of source of island arcs, 79-1408; geochem., cosmochem. applications, 79-3236 (2); Nd-Sr isotopes,

chem. evolution of crust and mantle, 79-3803; petrogenetic mixing models, 79-3804; Norway, data from Archaean migmatites, 79-1442

Neovolcanic rocks, *Czechoslovakia*, geochem. of Cu, Pb, Zn, Hg, 79-3812

NEPAL, E, petrol., metamorphism, K/Ar age detn., 79-3248 (8); Himalaya, lithostratigraphy and structure, 79-3248 (7); Quaternary relief thrusts, 79-3248 (9)

Nepheline, phase equilibria, 79-1272, 2327; nepheline-diopside system, residual liquid comp., 79-373; hydrothermal alteration products, 79-2418; phase relationship with alkali feldspar, 79-1345; solid solutions in melilite-bearing eruptive rocks, 79-3750; nepheline-kalsilite system, subsolidus phase relations, 79-2419; temp., pressure, redox conditions, equilibria in nepheline rocks, 79-1273; Portugal, 79-831; Russian SFSR, 79-901; Greenland, 79-818

Nephelinite, liquidus relations, 79-3649; formation, 79-2327; diopside-spinel equilibria, 79-2292; olivine —, nepheline solid solutions in, 79-3750; *Hawaii*, bariantitanian biotites in, 79-4035

Nephrite v. amphibole

Network analysis, applied to mineral ex-

ploration, 79-2157

Neutron activation analysis, errors caused by matrix absorption, 79-3226; sample size errors, 79-2000; of international geochem. reference samples, 79-2615; U.S.G.S. reference samples, 79-3904; RE in rock standards, 79-2644; comparison of RE data, 79-3907; trace element detn. in geostandards, 79-2631; in standard ultrabasic rocks, 79-2623; in standard diorite and granite, 79-2626; Nb in standard rocks, 79-3901; impurities in diamond, 79-57; RE and trace elements in K-feldspar, 79-2622; biogeochem. prospecting, 79-3894; standard soils, 79-83; Bulgaria, soils, 79-3228; of Kimberley Reef conglomerates, 79-55

— diffraction studies, malachite, 79-205; andalusite and sillimanite, 79-145; structure of β-eucryptite, 79-3349 (72); Al/Si distribution in plagioclase, 79-3349 (42); structure of hydrosodalite, 79-1120; dioptase structure refinement, 79-2102; clay-water systems, 79-3266; α-gallium oxide deuteriohydroxide, 79-187; magnetic structure of

Bi<sub>2</sub>Fe<sub>4</sub>O<sub>9</sub>, 79-1136

 scattering, structure and dynamics of claywater systems, 79-2014 (2.2); interlamellar water in montmorillonite and vermiculite, 79-2014 (2.3)

New Britain v. Papua New Guinea

New minerals, thirtieth list of new names, 79-1644; glossary update, 79-2873; abelsonite, 79-1646; albrittonite, 79-761; aleksite, 79-4111; argentopentlandite, 79-762; bartonite, 79-763; bilibinskite, 79-4112; biopyriboles, 79-1658; bohdanowiczite, 79-2874; boyleite, 79-1647; brenkite, 79-764; brindleyite, 79-1648; burckhardite, 79-4113; černyite, 79-4114; cochromite, 79-2875; daomanite, 79-1649; desautelsite, 79-4415; donnayite, 79-4116; dugganite, 79-1651; friedrichite, 79-4117; garavellite, 79-2877; georgeite, 79-2878; goudeyite, 79-1653; hypercinnabar, 79-2879; jixianite, 79-2880; kalipyrochlore, 79-1650; kanoite, 79-4118; keckite, 79-4119; khinite, 79-

1651; kleemanite, 79-2881; kraisslite, 79-1652; liandrite, 79-1654; maghagendorfite, 79-2876; manganochromite, 79-2882; marsturite, 79-2883; matulaite, 79-765; sodium trioctahedral mica, 79-4126; nichromite, 79-2875; nukundundamite, 79-2885; orthobrannerite, 79-766; parakeldyshite, 79-2886; parakhinite, 79-1651; parnauite, 79-1653; paulmooreite, 79-4120; petscheckite, 79-1654; phurkalite, 79-767; Pt-group minerals, 79-1645; polhemusite, 79-2887; queitite, 79-4121; rajite, 79-2889; rosemaryite, 79-2876; rostite, 79-4122; rynersonite, 79-1655; sabatierite, 79-2890; sarabauite, 79-1656; sasaite, 79-768; satterlyite, 79-4123; schreyerite, 79-2891; shachialite, 79-1659; sugilite, 79-2892; surite, 79-2893; thadeuite, 79-4124; tsumoite, 79-2894; veatchite-A, 79-4125; weissbergite, 79-1657

NEW ZEALAND, collectors review of minerals, 79-4831; devitrification of glass from steelworks slag, 79-2326; forms of sulphur in coals, 79-1998; mineral matter in coals, 79-3008; mineralogy of silt fractions of soils, 79-2077; Fe oxides in soil samples, 79-2014 (6.8); organo-mineral fractions of soils, 79-2023; radionuclide in soils, 79-2610; Th/U ratio in soils, 79-2599; mercury in geothermal discharges, 79-2573; oil shale, DTA study, 79-4270; Auckland, volcanic risk map, 79-2956; Broadlands geothermal field, aluminium-in-quartz geothermometer, 79-1616; P-T curves for H<sub>2</sub>O-CO<sub>2</sub> two-phase mixture, 79-2283; Christchurch, radon in artesian waters, 79-2261; Doubtful Sound, Fiordland, geothermometry and barometry in gneisses, 79-4075; Dunedin volcano, alkali volcanic rocks, 79-1728; Eglinton Valley, paired arcs in Permian volcanics. 79-2491; Fiordland, staurolite, 79-3702; margarite in anorthosite, amphibolite, hornblendite, 79-3047; Glenorchy, magnetic schist, 79-3083; Kaipara Harbour, clinoptilolite pseudo-morphs, 79-709; Longwood Range, pre-Tertiary geol., 79-2941; geol. of Milford Sound and Hollyford Valley, 79-1673; Moke Creek, sphalerite geobarometry, 79-2851; North Cape, laterization of ultramafic-gabbro association, 79-2082; North Canterbury, Castle Hill basin, glauconites, 79-1606; North Island, rhyolitic glass from Holocene tephras, 79-1761; Kiwitahi and Maungatautari volcanics, 79-1729: Wairakei geothermal area, geol. and hydrothermal alteration, 79-1672; thermal water transport of major rock constituents, 79-2568; Northland and Auckland, Mn deposits and associated rocks, 79-1390; Opotiki, halloysite in tephra beds, 79-2076; western Otago, petrol. of ocellar lamprophyres, 79-4203; Paparoa Range, Charleston and Greenland metamorphic groups related, 79-3046; 1969 eruption of Ruapehu, 79-1762; South Island, Oamaru, pillow basalts and breccias, 79-464; Southland, granitoids and gabbros, geochem. variations, 79-1730; Taranaki, Kapuni sandstones from Inglewood-1 well, 79-1805; Taupo pumice formation, hypersthene cooling history, 79-2960; Whangakea basalt. hydrothermal metamorphism, 79-1821

Niccolite, Morocco, 79-3099

Nichromite, South Africa, new spinel group

mineral, anal., 79-2875

Nickel, fusion method for XRF detn., 79-1052; in karstic environment, 79-2190; partitioning between olivine and komatiite liquids, 79-290; between olivine and silicate melt, 79-291; between basaltic and synthetic melts and olivines, 79-1282; between diopside and silicate liquids, 79-1283, 2380, 2381; between forsterite and aluminous silicate melts, 79-3636, 3637; behaviour in laterites, 79-2459; Poland, in mixed layer silicates, 79-2814; India, exploration using geobotany, 79-3816

compounds, oxygen chem. potential in Ni/NiO system, 79-2344; effect of heat on lattice parameter of nickel ferrite, 79-2342; Ni-containing silicate and aluminate

minerals, 79-2815

deposits, karstic, 79-2190; sulphide deposits and associated volcanism, 79-3445; Botswana, Ni-Cu deposits, 79-2158 (9); South Africa, proposed palaeometeorite, 79-2158 (6); Brazil, lateritic, chem. and mineralogy, 79-435

ores, history and types of deposits, 79-2197; supergene alteration, 79-2352

Nickeliferous nodules, France, 79-2007 (9) Nifontovite, crystal structure, hydrogen bond-

ing, 79-2130

NIGERIA, mineralization in Younger Granite province, 79-1070 (III.3); ammonium fixation in soils, 79-109; Younger Granites, Zn-rich tin province, 79-1177; Godani Valley pluton, sector-zoned microcline megacrysts, 79-1607; geol of Liruei, Banke and adjacent Younger Granite ring-complexes, 79-836; Ningi-Burra complex, dissected caldera and migrating magmatic centres, 79-2925; Zulu, Chafe, Katsina, geol., 79-2899

Nigerite, Czechoslovakia, accessory in granite, chem., X-ray, 79-2841

Nimesite v. brindleyite

Niobium, in USGS standard rocks, 79-3901; detn. of traces in silicate rocks, 79-1992; partition coefficients, 79-1287; Bulgaria, geochem. in lamproitic rocks, 79-454

compounds, 4Nb<sub>2</sub>O<sub>5</sub>.9WO<sub>3</sub>, crystal struc-

ture, 79-1139

Nitrammite, crystal structure, 79-75 Nitrate, source in ground water, 79-3891 Nitrobaryte, crystal structure, 79-75

Nitrocalcite, crystal structure, 79-75 Nitrogen, density of gas, 79-262

compounds, role of NO and NO2 in troposphere and stratosphere, 79-3236; (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, mechanical twinning, 79-3349 (7)

Nitrokalite, crystal structure, 79-75 Nitronatrite, crystal structure, 79-75

Noble gases, in upper mantle, 79-414; in lunar soil, 79-3908

metals, detn. of traces in rocks, 79-3208; Western Australia, from interflow sedimentary rocks, 79-2524

Nontronite v. smectite

Nordstrandite, crystallization in citrate systems, 79-2014 (6.4)

NORTH AMERICA, Proterozoic plate boundary, 79-997; palaeopoles and palaeolatitudes, 79-4400; Phanerozoic uranium deposits, 79-1060 (C.3); anorthosite massifs, rapakivi granites, and Late Proterozoic rifting, 79-853; development of Cordilleran metamorphic core complexes, 79-4322; Lake Huron, polar wander and palaeomagnetism of Thessalon volcanics, 79-

NORTH SEA, sedimentary basin development, 79-987 heavy minerals from Palaeocene, 79-4252; min. comp. of Tertiary sediments from wells, 79-2014 (3.5); eastern Skagerrak, destructive diagenesis

of carbonate sediments, 79-1788

NORWAY, mineral deposits, 79-3232 (4); Caledonides, 79-771 (2-8); terrestrial heatflow determinations, 79-956; Finnmarkian phase of Caledonian orogeny, 79-773; geochem. of type trondhjemite, 79-3231 (17);- quartz-mica schist containing porphyroblasts, 79-1823; south Precambrian region, 79-912; Late Precambrian Moelv tillite, 79-879; geol. and evolution of Kongsberg series, 79-913; S, Precambrian Holum granite, 79-786; Akersvatn, geol. and tectonics, 79-908; Alnsjøen area, Nittedal cauldron, geol. excursion, 79-787 (9); Ana-Sira anorthosite massif, geol., 79-824; Aurlandsdalen, petrog. and structure, 79-779; Aust-Agder, Sugne and Ubergsmoen, metasedimentary gneisses, 79-910; Bergen, Precambrian Ulrikens gneiss complex, 79-1443; structural features of Laksevåg gneiss, 79-783; Bratthagen, parakeldyshite, 79-2779; Brevig, Fe in sillimanite, 79-3358; Dyvikvågen and Ulven-Vaktdal areas, late Ordovician-early Silurian stratigraphy, 79-781; Egersund-Ogna anorthositic massif, 79-3724; Finnmark, Caledonides, 79-771 (4); Laksefjord, Precambrian basement, 79-774; Varanger Peninsula, geol., 79-776; geochem, of dolerite and metadolerite dykes, 79-448; Flekkefjord area, radioactive elements in granite, 79-450; Froland, Gloserheia granite pegmatite, 79-823; Hardangervidda, orbicular diorite, 79-882; Holterkollen plutonic complex, RE distribution, 79-1397; Jotunheim, almandine in metadolerite dyke, 79-2764; Kalskaret, trace elements and ore formation in peridotite, 79-1381; Karmøy ophiolite, 79-4237; Kleivan granite, fluid inclusions in, 79-2917; Krokskogen lava area, 79-787 (12); Kvaløy, sub-Caledonian unconformity within Finnmarkian nappe, 79-775; Lofoten-Vesterålen, Archaean and Proterozoic crustal evolution, 79-9; Nd, Sr, Pb isotope data from Archaean migmatites, 79-1442; Vestvågøy, geol. and structure, 79-777; Lyngdal, migmatite complex and related granulite metamorphism, 79-911; Nordmøre, petrog. of Hjekmkona ultramafic body, 79-820; Oslo region, structure of larvikite-lardalite complex, 79-1697; gravity interpretation of Oslo graben, 79-788; Oslo palaeorift, 79-787; sedimentary rocks associated with lavas, 79-787 (2); plutonic rocks, 79-787 (3); chevkinite and perrierite, 79-1588; Oslofjord, geol. excursion, 79-787 (10); Ranafjord, metals in dated sediment core, 79-2246; Ringsaker, petrog. of tills, 79-878; Rogaland, pyroxenes from Fe-rich igneous rocks, 79-4022; Storgangen ilmenite orebody, 79-1169; Rogaland, Vest-Agder, amphiboles and

host rocks in metamorphic Precambrian, 79-676; Vikeså, osumilite, 79-657 Sammanger-Osterøy area, geol. of Lr. Palaeo-79-782; Sassenfjorden, rocks, Spitsbergen, Triassic black shales, 79-3866; Selje dist., eclogite pods from basal gneisses, 79-906; Setesdal, gadolinite, 79-410; Sirdal-Ørsdal area, ages of zircons from high-grade metamorphic Pre-cambrian, 79-3147; Slemmestad and Storforshei, organic compounds in rocks, 79-484; Stord, geol. of Dvyikvågen group, 79-780; Sulitjelma, Caledonian sulphide mineralization, 79-431; Sunnhordland, mantle-derived lherzolite, 79-4179; Surnadal syncline, Rb/Sr study, 79-10; Svalbard, Caledonides, 79-771 (2); Tafjord area, anorthosites, eclogites, and ultramafic rocks, 79-784 Telemark area, Th, U, K and heat production in granites, 79-449; Trollheimen, three-fold phases in Caledonides, 79-907; Trøndelag, extension of Offerdal and Särv nappes and Seve supergroup, 79-778; Trondheim, coronites from Fongen gabbro complex, 79-821; Fosen area, Old Red Sandstone lithostratigraphy and sedimentation, 79-877; Trondheim and Oslo regions, Lr. Palaeozoic rocks, 79-472; Tyin-Bygdin-Vang region, nappe complex, 79-909; Valdres, geol. and structure of Beito window, 79-785

NORWEGIAN SEA, distribution of basement, 79-1056 (4.5); sedimentation, 79-

1056 (5.2)

Novacekite, Brazil, 79-3120

Nuclear magnetic resonance, non-destructive probe for gemstones, 79-3776; study of micas, 79-3376; plagioclase feldspars, 79-

- technology, crustal distribution of requisite metals, 79-3456

Nukundamite, Fiji, new mineral, anal., opt., X-ray, 79-2885

Null values of ratio correlation, detn. by simulation, 79-66

Obsidian, diffusion experiments, 79-284; diffusion of Sr, Ba, Na, 79-1284; diffusion of Eu, Gd, 79-1286; hydration profiles, 79-2; 79-363; hydrothermal alteration, peralkaline, oxidation state in anhydrous experiments, 79-3656; pantelleritic, crystallization under hydrous and anhydrous conditions, 79-3655; Greece, 79-69 (18)

OCEANIA, distribution and characterization

of volcanic glasses, 79-862

Oceanic crust, vertical compositional zoning in extrusive portion, 79-1770; seismic velocities, 79-71 (17); seawater-saturated, electrical props., 79-1875; serpentinization process, 79-2976; investigations on Mid-Atlantic Ridge crest, 79-4405

- lithosphere, age related to interarc spreading and cordilleran tectonics, 79-1919

mantle beneath southern Rio Grande rift, 79-1779

Oceans, synoptic eddies, 79-71 (21)

Oil, correlation of source rocks, 79-1434, 2540; crude, biodegradation of steranes and terpanes, 79-2584; oil shale, dielectric props., 79-4359; thermophys. props. of oil-shale minerals, 79-4354

Olistostromes, Taiwan, 79-869

Olivenite-adamite solid solutions, ordering in, 79-3427; symmetry and crystal structure, 79-193; France, 79-1887

Olivine, thermal expansion, 79-1865; thermal treatment, 79-306; electron distribution, 79-3349 (15); structural morphology, 79-3351; cation site thermal vibration ellipsoids, 79-140; electrical conductivity, 79-4343; optical and electrical props. at high pressure, 79-337, 340; plastic flow of oriented single crystals, 79-1302; in peridotites, dislocation density and subgrain size, 79-3067; mantle-derived, dislocation structure, 79-3066; naturally deformed, dislocations in, 79-4341; anisotropic track etching, 79-4342; RE solubility, 79-285; interdiffusion in system Fe<sub>2</sub>SiO<sub>4</sub>-Mg<sub>2</sub>SiO<sub>4</sub>, 79-336; Fe-Mg diffusion and cooling rate, 79-1501; partitioning of Ni2+ with basaltic melts, 79-1282; Ni partitioning with komatiite liquids, 79-290; with silicate melt, 79-291; distribution of Mg<sup>2+</sup> with silicate melt, 79-1281; partitioning of Ni2+, Co2+, Fe<sup>2+</sup>, Mn<sup>2+</sup>, Mg<sup>2+</sup> with silicate melts, 79-2310; in picrite, phase relations and Fe, Mg, Ca partitioning with liquid, 79-3692; distribution of Fe and Mg with lunar basaltic liquids, 79-2311; Mg/Fe distribution, influence of oxygen partial pressure, 79-3685; olivine-spinel transition, crystalfield stabilization, 79-339; coexisting with spinel and orthopyroxene, 79-2375; olivinespinel geothermometer re-evaluated, 79-2752; olivine-garnet geothermometer, 79-3691; reaction with cordierite, 79-3710; nucleation delay in mafic magmas, 79-3608; in basalt melt, 79-3609; altered to serpentine, 79-4041; meteoritic, particle tracks and noble gases, 79-643; anal., 79-2718; microchem. anal., 79-646; in type 2 carbonaceous chondrites, 79-1571; lunar, 79-584, 1512; from lunar basalt, 79-2691; in coarse-grained basalt, 79-1494; in breccias, comp. and origin, 79-1515; absorption spectra, 79-585; Norway, role of water in olivine-plagioclase reaction, Finland, 79-819 Scotland, 79-826; hightemp. oxidation, 79-2748; *Italy*, 79-921; *Spain*, showing perfect cleavage, 79-2749; Russian SFSR, 79-901; in komatiites, 79-1696; Mid-Atlantic Ridge, 79-4077, 4078; Greece, from gabbros, 79-4192; Africa, Na, K, P, Ti in, 79-4005; Ethiopia, Fe/Mg distribution, 79-4004; Lesotho, 79-3233 (II.7); South Africa, 79-839; in kimerlite, 79-3233 (III.2); Japan, from picritic rocks, 79-2750; Ontario, in ferroaugite syenite, 79-2789; Arizona, gem peridot, 79-70 (13); interpretation of zoning, 79-1585; Minnesota, Ontario, 79-934; Vermont, texture and chem. variations, 79-1852; Mexico, gem peridot, anal., opt.,

--, fayalite, pressure effect on optical absorption bands, 79-338

-, forsterite, 79-4291; stability, 79-3689; in system MgO-SiO<sub>2</sub>-H<sub>2</sub>O, 79-2397; solubility of H<sub>2</sub>O in, 79-280; lattice dynamics, 79-2366; dissolution, changes in surface area and morphology, 79-2367; hydration rate, 79-2296, 2297; Ni partitioning with aluminous silicate melts, 79-3636, 3637; forsterite-monticellite solid solution limits, 79-2368; equilibria, 79-2369; coexist-

ing with diopside and enstatite, solubility of Ca, 79-3686; *British Columbia*, forsterite-fayalite-tephroite series and knebelite, 79-2751; *New York*, in monticellite marble, 79-1854

---, tephroite, thermal expansion, 79-939; France, 79-2770; Brazil, 79-1226

Olivine-type structures, Madelung energies and cation distributions, 79-3352; LiScSiO<sub>4</sub> compared with Mg<sub>2</sub>SiO<sub>4</sub>, 79-2091

OMAN, ophiolite complex, 79-2977; Masirah ophiolite, high-K granites, 79-2978

Omphacite v. pyroxene

Ooids, experimental aggregation, 79-275

Oolites, organic remains after conversion to fluorite, 79-1051; *Bahamas*, genesis, 79-4279, 4280

Opal, synthetic, SEM study, 79-1354, 1361; Slocum stone, anal., opt., 79-1355, 2440; natural and synthetic, thermoluminescence, 79-1369; plastic impregnated, opt., 79-2432; Germany, 79-1353; Czechoslovakia, geol. and structure of deposits, 79-2224; Australia, 79-2429; South Australia, 79-390; New Zealand, 79-1672; Alberta, ferruginous, anal., 79-2821

—, hyalite, *Germany*, 79-4374 —, lussatite, genesis, 79-4056

Opaque minerals, props. from crystalchemical models, 79-3056; identification, Nottingham interactive system, 79-1970

Ophiolite complex, Newfoundland, seismic velocity structure, 79-1873; Chile, meta-

morphic petrol., 79-1782

Ophiolites, tectonic regimes of genesis, 79-4236; models for magnetic layer of oceanic lithosphere, 79-2977; serpentinization process, 79-2976; glaucophane metamorphism, 79-2979; Norway, 79-4237; Hungary, tectonic significance of geochem. data, 79-4238; Mediterranean area, comp. of clinopyroxenes from, 79-4020; Taiwan, ocean-ridge metamorphism, 79-2983; Mongolia, petrol., origin, 79-868; Newfoundland, detritus in flysch, 79-2986; Quebec, oceanic crusts of Betts Cove type, 79-1777, 1778; California, 79-1780; age relations, 79-4246; Washington and California, Palaeozoic complexes, 79-32; Lesser Antilles, age and origin, 79-34; Guadaloupe and Newfoundland, seismic wave data, 79-2987; Guatemala, chem. data, 79-1414; Chile, open and closed system igneous fractionation, 79-2989 Ophiolitic breccias, Italy, 79-4239

Optical anomalies, origin, 79-4239

— constants, error problems in two-media method, 79-1035

Ore reference material, 79-2625; standards, assessment of analytical data, 79-1370; ore-deposition through geol. time, 79-218; ore-forming processes, conference report, 79-1148

Organic compounds, detn. in *Norwegian* rocks, 79-484

— matter, in Earth's crust, 79-71 (15); role in metal-sediment-water interaction, 79-1458; degradation products in evaporites, 79-1456; fluorescence in coal petrog., 79-4258; methods for removal from removal from clay, 79-2022; in soils, comparisons by pyrolysis mass-spectrometry, 79-3318; Spain, reflectivity, 79-1836; USSR, in Lake Baikal sediments, 79-2562; Bermuda, in

pore-water of carbonate sediments, 79-3554; Northwest Territories, associated with fine clay minerals, 79-2086

Organosilicate compounds, prepn. from phlogopite, 79-3257

Orpiment, spherulitic growth under hydrothermal conditions, X-ray, 79-2354

Orthobrannerite v. brannerite

Orthoclase v. feldspar

Orthoericssonite, *Japan*, chem., opt., X-ray, 79-2776

Orthogneiss, France, 79-4147; Italy, microstructure and mineralogy, 79-4311

Orthopinakiolite, crystal structure, chem., 79-3420

Osmium, chem. fractionation in Moon, 79-528; in *Greek* chromites, 79-1382; *Cyprus*, distribution in *Troodos complex* rocks, 79-2481

Osumilite, Fe site distribution and anomalous biaxiality, 79-1594; *Norway*, anal., opt., X-ray, 79-657

Ottemannite, 79-1322

Ottrelite, *Belgium*, anal., opt., X-ray, 79-2777 Oxide ceramics, thermal conductivity and emissivity, 79-952

Oxides, crystal structure and compressibility, 79-3591

Oxyacid salt minerals, free energies of formation, 79-2306

Oxygen, in Archaean ocean, 79-464; partial pressure in CO<sub>2</sub>-H<sub>2</sub> mixtures, 79-2332; diffusion in vitreous SiO<sub>2</sub> fibres, 79-2315

— buffers, calibration using hydrogen fugacity sensor, 79-1266

— fugacity, 79-269; effect on formation of skarn, 79-3462 (4)

-isotopes, geochem. of island arc rocks, 79-441; in basalts and andesites, 79-461; equilibrium between quartz and water, 79-3786; fractionation in quartz-water system, 79-1296; in calcite-depositing spring, 79-2578; in land snail shell carbonate, 79-3789; Iceland, geochem. of siliceous volcanic rocks, 79-445; comp. of 1973 Heimaey lava, 79-446; Italy, in eclogites, 79-486; Tyrol, study of polymetamorphic area, 79-1446; South Africa, geochem. of cherts, 79-1448; Indonesia, in andesites, 79-460; Greenland, comp. of metamorphosed chert and iron formation, 79-490; in Skaergaard intrusion, 79-1396; Canadian Shield, comp. of surface crystalline rocks, 79-1451; New Hampshire, geochem. of Clough formation, 79-488

Ozone layer, petrochem. and dynamics, 79-71

PACIFIC OCEAN, Cainozoic volcanic rocks, Sr isotopic features, 79-2982; <sup>10</sup>Be in surface water, 79-3878; volcanic glasses, 79-862; birnessite, 79-4085; metal accumulation rates during Cainozoic, 79-3847; ferromanganese nodules, 79-424; interaction of SO<sub>2</sub> with, 79-2168; geochem. of manganese nodules 79-3796; silicate spherules from deep-sea sediments, 79-1579; palygorskite deposit, geochem. and origin, 79-3304; S, lithospheric flexure and uplifted atolls, 79-1026; dissolved organic carbon, 79-2553; DSDP site 284; isotopic history and volcanic ash stratigraphy, 79-3850; SW, mineralization in island arcs, 79-2201; submarine metalliferous sediPACIFIC OCEAN (contd.)

ments, 79-500; W, magnetic lineations in Jurassic quiet zone, 79-3084; central, brown clays, 79-2078; N, manganese nodule exploration, 79-3436, 3437; Aleutian Is., nature and source of andesites. 79-872; Bauer basin, metalliferous sediments, 79-425; Bikini lagoon, anal. of alpha emitters in coral, 79-3555, 3556; Bounty Is. area, ages of granites and metasediments, 79-1010; existence of Caroline plate, 79-1918; East Pacific Rise, neutron-activated sea-floor basalt glass, 79-2493; structure of crest, 79-1927; Emperor-Hawaii chain, island subsidence, hot spots, lithospheric thinning, 79-1025; Fiji, nukundamite, 79-2885; Miocene low-K dacites and trondhjemites, 79-3231 (22); Fiji plateau, volcanic ash layers, 79-863; Funda, porphyry-type gold mineralization, 79-2213; Vanua Levu, Kuroko-type deposits, 79-1221; Galapagos Rift, chem. of hydrothermal mounds, 79-430; Gulf of Alaska, 40 Ar/39 Ar dates of ash layers, 79-1018; Mariana Is., high-Mg volcanic rocks, 79-1407; basalts, andesites, dacites, 79-1408; Mariana island arc, origin of andesite, 79-2981; volatiles in submarine volcanic rocks, 79-3820; Mariana Trough, back-arc spreading, 79-1924; Guam, chrome-spinels in basalts, 79-4245; Marquesa Is., MnO in alkali basalt lavas, 79-2477; New Caledonia, pyramidal quartz crystals, 79-703; alteration of periodotites, 79-2198; 2200; 79-4332; coalification and chromites. graphitization in high-pressure schists, 79-3050; Pacific-Antarctic Ridge, sedimentary geochem. processes, 79-480; heat flow, 79-3077; Pacific ore belt, tin deposits related to granites, 79-1070 (V.3); Palos Verdes shelf, geochem. of mercury in sediments, 79-1264; Seram, reinterpretation of geol., 79-4153; Solomon Is., garnet-bearing lherzolites, 79-3233 (V.5); ages of rocks from Small Nggela Is., 79-1960; Malaita, alnöitic breccia, 79-847; low-K2O dacite from Tonga-Kermadee island arc, 79-3231 (20); western Pacific and Philippine basin, morphology of seamounts, 79-3134

Pahoehoe. Kenya, 79-4222 Painite, IR spectrum, 79-1143

PAKISTAN, NW, acicular hornblende schists, 79-926; Baluchistan, Muslimbagh, geochem. of chromites, 79-725; Chitral, eastern Hindukush, palaeomagnetic data from Upper Devonian, 79-4414; Hub Dam area, clays, 79-112; Indus Kohistan, Pattan, pyrrhotite-pyrite-chalcopyrite vein, 79-740; Malakand, carbonatite, 79-840; Mardan, topaz, 79-2771; Nagarparkar, mineralogy, geochem. of clays, 79-1238; N.W.F.P., Batgram, Khwar Hill, Cr-muscovite-bearing zoned aplite, 79-903; Hazara dist., Ahl, mechanical anal. of 'clay' deposit, 79-111; Kohat dist., petrol. of Karak bentonite, 79-113; Sind, mineralogy, chem. of refractory deposits, 79-1239; Swat dist., Bar Bandai, spinel phases from lherzolite,

Palaeogeography, Palaeozoic, 79-3236 (18) Palaeomagnetism, of peri-Atlantic Precambrian, 79-70 (5); reversals of geomagnetic field, magnetostratigraphy, 791930; Scotland, Loch Shiel marine regression and overlying gyttja, 79-1942; France, reversal in lava flows, 79-3155; South Africa, melilite basalts, 79-1009; India, from Upper Devonian, 79-4414; Sumatra, evidence for rotation and northward drift, 79-4396; central Australia, Precambrian-Cambrian boundary, 79-992; Greenland, results from Skaergaard intrusion, 79-4365; Canada, 79-999, 1000; Frontenac palaeopole, 79-1020; Northwest Territories, Aston dykes and Savage Point sills, 79-1021; Ontario, gabbro complex, 79-1867; Keweenawan reversals, 79-4407; Umfraville gabbro, 79-3174; Quebec, from Seal group igneous rocks, 79-4370; California, negative inclination anomalies, 79-4413; Argentina, Andacollo series, 79-35; Brazil, Mesozoic igneous rocks, 79-4409

Palaeovolcanic rocks, USSR, role in structure of eastern Kamchatka, 79-2936

structures, Russian SFSR, Middle Proterozoic, 79-2962

Palladium, Poland, in ultrabasic rocks, 79-2471; Cyprus, distribution in Troodos complex rocks, 79-2481

South diantimonide, Australia, new

mineral phase, 79-2882

Palygorskite, surface props., 79-2014 (2.1); IR study of surfaces, 79-2014 (2.10); thermal anal. of water in, 79-2049; structural changes during dehydration and dehydroxylation, 79-3297; effect of dyhydration on specific surface area, 79-1079; alteration, 79-362; Poland, morphology, 79-3298; Pacific Ocean, geochem. and origin, 79-3304; South Australia, 79-118

Pantellerite, Ethiopia, viscosity of melt, 79-2316

PAPUA NEW GUINEA, high-Mg volcanic rocks, 79-1407; E, uvarovite, 79-4008; New Britain, basalts, andesites, dacites, 79-1408; ages and geol. relations of intrusive rocks, 79-1961

Paraffin dirt, Chile, organic geochem., 79-496 Parahopeite, South Australia, 79-3102

Parakeldyshite, Norway, anal., opt., X-ray, 79-2779; Russian SFSR, new mineral, anal., opt., X-ray, 79-2886

Parakhinite, Arizona, new mineral, chem., opt., X-ray, 79-1651

Paramelaconite, Arizona, crystal structure, 79-1131

Paratacamite, Scotland, 79-792

Parathion, surface reactions on clays, 79-

Parnauite, Nevada, new mineral, anal., opt.,

X-ray, 79-1653 Parrot Wing, mixture chrysocolla, 79-2442 of jasper and

Particle tracks, geoanalytic applications, 79-1368

Partitioning, implications of liquid-liquid distribution coefficients, 79-1291

Paulmooreite, Sweden, new mineral, chem., opt., X-ray, 79-4120

Pearl, distinction of black, artificial, and natural, 79-400; cultured, Japan, historical development, 79-401

Peat, impregnation for thin-section production, 79-3191; ESR as guide to degree of humification, 79-3316; Sweden, geochem. anomalies, 79-3892

Pectolite, Arkansas, hydrogen bonding and cation ordering, 79-3371

Pegmatites, Li-rich, petrogen, Norway, granite -, internal structure and mineralogy, 79-823; Cornwall, 79-1702; Poland, stilpnomelane from, 79-4036; Czechoslovakia, paragenetic types, 79-833; 79-4187: accessory mineral studies, mineralogy and petrog., 79-4188; USSR, mica-bearing and ceramic-, inner-contact rocks, 79-2930; Bulgaria, of various ages, 79-455; Afghanistan, gem-bearing, 79-2438; Western Australia, tin-bearing, age, 79-1011; Arizona, lithium -, 79-70 (3); California, gem-bearing, stable isotope and fluid-inclusion study, 79-2501; Virginia; perrierite-bearing, 79-1741

Pegmatoids, Victoria, mineralogical investigation, 79-1721; ramsayite-bearing, 79-

Pelitic schists, Japan, pyrrhotite from, 79-2848; British Columbia, homogenization of zoned garnets, 79-2757

Pentlandite, 79-2460; crystal chem., 79-3349 (50); Poland, 79-4089; Czechoslovakia, from ultrabasic body, 79-4080

-, argentopentlandite, Russian SFSR, new variety, anal., X-ray, 79-762

Periclase, high-temp. heat capacity, 79-3558; periclase-liquid reaction and bonding in magnesia refractories, 79-2370; comp. in CaO-MgO-Al<sub>2</sub>O<sub>3</sub>-Fe-O<sub>2</sub>-SiO<sub>2</sub>, system 79 3662; MgO-3CaO.Al<sub>2</sub>O<sub>3</sub>.15SiO<sub>2</sub> join, bearing on basalt crystallization, 79-3693

Peridotite, standard rock, trace element anal., 79-2623; melting in upper mantle, 79-1309; partial melting at high pressures, 79-300, 2291; perioditite + CO<sub>2</sub>, melting phase relations, 79-3643; phase relations, 79-301; xenoliths, and kimberlite intrusion dynamics, 79-3233 (II.12); olivine in, dislocation density and subgrain size, 79-3067; spinel- and garnet-, influence of Cr2O3 on, 79-3716; spinel- to garnet-inversion, 79-3642; garnet- RE partitioning at upper mantle P and T, 79-2312; trace element partitioning with garnet, 79-3633; DSDP leg 37, trace element geochem., 79-465; Norway, trace element distribution and ore formation in, 79-1381; France, ultramafic xenoliths in, 79-2920; Italy, petrogenesis, 79-2924; Q-mode factor anal., 79-4190; phlogopite in, 79-2806; Africa, xenoliths from kimberlites, 79-4005; Ethiopia, spinel-, major and RE partitioning in xenoliths, 79-2483; South Africa, phlogopite-bearing nodules in kimberlite, 79-12; polymict, 79-3233 (II.8); New Caledonia, alteration, 79-2198; 2200; Oregon, partial melting, 79-2947

Perovskite, solid soln. props., 79-1317; Russian SFSR, 79-730, 901; from kimberlites,

deposits, 79-1168

structure, related structure types, 79-177; KMgF<sub>3</sub>, elastic moduli, 79-4338; MgSiO<sub>3</sub>, structure and crystal chem., 79-350; isothermal compression, 79-3712; ferromagnesian silicate perovskite, effect of Fe on stability and unit cell, 79-3713

Perrierite, Norway, in syenite pegmatite, 79-

1588; Virginia, 79-1741

PERU, reference soil sample, 79-3897; rhodochrosite and other minerals, 79-3119; SUBJECT INDEX 517

ERU (contd.)

comendite and basalt in Mitu group, 79-1744; granite and latite andesite, 79-792; subduction of Nazca plate beneath central Peru, 79-874; Andagua rift valley, Holocene lavas, 79-4232; Andes, andesites, 79-461; unconformities in burial metamorphism, 79-936; Late Cainozoic lavas, 79-470; trace elements in lavas, 79-1415; Cerro Verde, porphyry Cu deposit, magmatic and hydrothermal micas, 79-2809; Macusani, virgilite, new mineral, 79-769

Petrofabric anal., homograms based on uniaxial interference figures, 79-1978

Petroleum, biodegradation, 79-2580; configuration of pristane in, 79-2546; USA, formation in Vinta Basin, 79-2587

4-forming processes, mathematical models, 79-1473, 1474

- industry, applications of atomic spectroscopy, 79-2013 (2.2)

Petrological fractionation processes, chem. variation, 79-411

Petscheckite, Madagascar, new mineral, chem., opt., X-ray, 79-1654

Petzite, Kazakhstan, structure refinement, 79-3411

Pharmacosiderite, France, 79-1887; Morocco,

Phenakite Austria, gem quality, opt., 79-3768 Phenolic acids, retention by hydroxy aluminium and hydroxy-iron cpds., 79-3290

Phillipsite v. zeolite

Phlogopite v. mica

Phosphate breccia, USSR, genesis in ultramafic-alkalic province, 79-2226

deposits, beneficiation of phosphate rock, 79-1227; Togo, 79-3534; South Australia, test drilling, 79-2229

- nodules, Poland, RE in, 79-2516

pebbles, Florida, effects of weathering, 79-438

-rock, uranium in, 79-3795; predicting agronomic potential, 79-3206

Phosphates, variation in bond lengths, 79-2089; crystal chem., 79-3349 (35); isostructural M(PO<sub>3</sub>)<sub>3</sub> polyphosphates, 79-3349 (31); staining technique and autoradiography, 79-1476; World production of fertilizers, 79-3527

Phosphorites, genesis, 79-3249 (12); Egypt, alpha radioactivity, 79-437; RE in, 79-2518; Namibian shelf, geochem., 79-436; Michigan, in Precambrian, 79-3539

Phosphorus, constraint on mantle source comp., 79-1379; distribution in soil fabric, 79-3327; 3328; in USGS standard rocks, 79-3898; Lake Michigan, in unconsolidated sediments, 79-242; Wyoming, in hydrothermal waters, 79-3886

Photographic photometry, 79-2013 (1.1)

Phurcalite, E Germany, new mineral, anal., opt., X-ray, 79-767; crystal structure, 79-3425

Phyllites, Massachusetts, zoned plagioclase and peristerite formation in, 79-1613

Phyllosilicates, hydrothermal transformations, 79-362; phyllosilicate-azoic dye complexes, synthesis, 79-99

Physics of minerals and inorganic materials, book, 79-3242

Pickeringite, France, 79-3087

Picrite, phase relations and element partition-

ing, 79-3692; Japan, containing olivine, anal., 79-2750

Picroilmenite, 79-3726

Piemontite v. epidote

Pierrottite, crystal structure, 79-3349 (44) Pillow breccias, India, from Precambrian metabasalts, 79-4316

lavas, Kenya, 79-4222

Pillows, France, contamination, 79-1828

Pinakiolite, structure related to orthopinakiolite, 79-3420

Pisolites, South Wales, crystal textures, 79-4256

Pisoliths, USA, lacustrine, structure and growth, 79-3011

Pistacite v. epidote

Piston-cylinder gauges, effective area and accuracy, 79-247

Pitchstone, hydrothermal alteration, 79-363; Mull, sheath and core structure, 79-4218 Plagioclase v. feldspar

Plagiogranites, oceanic, 79-3231 (5)

Planes, orientation of intersection, graphical method, 79-1045

Planetary bodies, thermal evolution, 79-542

geology, colloquium, 79-603

Planets, mineralogy, 79-2647; impact-induced energy partitioning, melting, vapourization, 79-3936; photogeology, review, 79-3982; calculating temperatures and viscosities,

Plate tectonics and ancient mobile belts, 79-2901 (16); mineralization 79-2149; Early Cainozoic global plate reorganization, 79-988; geothermal gradients and plate production rate, 79-995; sea-floor spreading, deep subduction, and plate motion, 79-998

Platinum, native, comp. and props. of concentrates, 79-2831; absorption of Fe from basalts, 79-246; Pt-Fe alloy sample containers, 79-3576

metals, Cyprus, in rock-forming minerals, 79-3788; Poland, in ultrabasic rocks, 79-2471

- minerals, China, 89-1645

Plutonic rocks, nomenclature, 79-1688; French Massif Central, magma/xenolith relationships, 79-830

Plutonium, Pu-U-Th fractionation, 79-286; geochem. in soils and sediments, 79-3252; in coastal sediments, 79-3846

Podzols, Scotland, extractable Ti and V in, 79-2055

POLAND, gem materials, 79-1360; Zechstein copper deposits, grain morphology of ore materials, 79-2189; SW, amber from Upper Cretaceous deposits, 79-4067; NE, sulphide minerals in magnetite rocks, 79-4089; Andelska-Hora beds, tectonic structures and deformation, 79-1666; Carpathians, biochem. siliceous rocks, 79-4263; Czarne area, crystallization conditions of smoky quartz, 79-1617; Fore-sudetic monocline, variability of Cu-ore deposit, 79-222, 2850; Holy Cross Mts., Early Palaeozoic tuffogenic rocks, 79-1091; RE in phosphate nodules, 79-2516; Kletno, bohdanowiczite, 79-2874; dyke rocks of Ktodzko-Złoty Stok granitoid massif, 79-1708; Leśna area, heavy minerals from cassiterite placers, 79-1175; Lower Silesia, colloidal clay fractions from Turoszów clays, 79-1089; Pt and Pd in ultrabasic rocks, 79-2471;

greisenization in Izerskie Mts. foothills, 79-453; Kamein, origin of kaolin, 79-107; Machów, acid activation of Miocene clays, 79-3285; Nowy-Dzikowiec, hydrothermal mineralization in diallage gabbro, 79-1201; Przeworno, marble and graphite, 79-3872; Rudno, morphology of sepiolite and palygorskite, 79-3298; saponite, 79-4043; Fe-caledonite, 79-4042; heulandite, 79-4352; Sanok area, mottled shale series of Carpathian Flysch, 79-2073; Sarni Las, heavy minerals from Quaternary deposits, 79-2998; Silesia-Cracow region, lattice defects in Triassic dolomites, 79-754; Strzegom-Sobótka massif, stilpnomelane, 79-4036; post-magmatic mineral formation in Strzelin granitoids, 79-900; Sudetes, joints in granitoids of Kudowa-Olešnice massif, 79-1665; Szklary, Ni-containing mixed-layer silicates, 79-2814; Tarnobrzeg region, hauerite in Badenian clays, 79-2515; Vistula, sulphur compounds in wellencrusting sediments, 79-4090; Wieliczka, X-ray anal. of mud-sandy rocks, 79-3196; Ziemia Lubuska, clay raw materials, 79-2084, 2085

Polished sections, preparation, 79-3190

Polhemusite, Idaho, new Hg-Zn sulphide, anal., X-ray, 79-2887

Pollucite v. zeolite

Polydymite, Missouri, anal., 79-2852

Polymetallic nodules, North Pacific, exploration methods, 79-3437

Polytype notations, 79-3349 (5)

Porosimetry, mercury technique, 79-1042 Porosity, reduction by pressure solution, 79-1303

Porphyroblastesis, inter- and syn-kinematic distinction, 79-1823

Porphyry systems, localizing ores from pressure gradients and boiling, 79-3464

PORTUGAL, massive sulphide deposits, 79-1174; lineament patterns and hypogene mineralization, 79-2182; uranium mining industry, 79-3470; Alentejo, gabbros of Odivelas complex, 79-3817; Aljustrel and Gavião pyritite deposits, tuff sequence, 79-4220; Arouca-Castro Daire region, geochem. prospecting data, 79-2600; Borralha mine, zoning in hübnerite-ferberite series, 79-1070 (IV.1); fluid inclusions in quartz from tungsten deposit, 79-2181; Capinha and Penamacor, lithostratigraphical units, 79-4301; Cravezes, Mogadouro, scheelitic deposits, geol. and geochem., 79-3512; Ferreira-Ficalho group, correlation with Pulo do Lobo group, 79-4139; Gêres, origin of pink colour in granites, 79-4185; Guardão region, granitoids, 79-4184; Lousã basin, sedimentology, 79-4259; Monchique alkaline complex, petrol. and petrogen., 79-831; Panasqueira, thadeuite, new mineral, 79-4124; luminescence of apatites, 79-2868; Penalva do Castelo region, prospecting for tin and tungsten ores, 79-3469; Picavessa Mts., limestone and dolomite formations, 79-2512; Rio Maior to Alcobaça, clay minerals, 79-2079-2081; Sesimbra-Capo Espichel area, carbonate formations, 79-2997; Sierra Albarrana, metamorphic mineral associations, 79-4300; Sintra, Sines, Monchique batholiths, tectonic and genetic connection, 79-2922;

Trás-os-Montes province, crossite, 79-

PORTUGAL (contd.)

4031; Valongo, Ribeiro da Igreja Sb-Zn-Pb deposit, 79-3511; Vila Nova de Foz Côa, geol. and geochem. prospecting, 79-2601

Posnjakite, Germany. 79-2862

Potassium, oceanic budget, 79-3875; Norway, in granites, 79-449; USSR, distribution in metamorphics and granitoids, 79-1450; *Utah*, in soils, 79-122

compounds, KBr, Debye-Waller factors, 79-1128; KMgF<sub>3</sub>, elastic moduli, 79-4338; KCl, K<sub>2</sub>SO<sub>4</sub>, solubilities, 79-3680; KSbO<sub>3</sub>, potassium ion ordering, 79-185; KTaO<sub>3</sub>, defect structure and electrical props., 79-950; K<sub>2</sub>[TiO(CO<sub>2</sub>O<sub>4</sub>)<sub>2</sub>].2·25 H<sub>2</sub>O, crystal structure, 79-3430

Praesodymium compounds, PrFeO<sub>3</sub>, Pr<sub>2</sub>NiO<sub>4</sub>,

electrical props., 79-324

Precambrian, subdivision, 79-1003; shield formation, 79-1056 (2.1); crustal additions, 79-1056 (2.2); Precambrian-Cambrian boundary, symposium, 79-1923; low-temp. hydrothermal deposits, 79-2153; correlation of mobile belts, 79-2901 (2); metazoan biota, 79-71 (3)

Precious metals, 79-2013 (2.1)

Preferred orientation, development in rocks, 79-3607

Prehnite, Japan, 79-2794; New Zealand, 79-1672; Massachusetts, 79-2774

Preobrazhenskite, 79-199

Pressure, static generation of 1.72 megabars, 79-3561; calibration above 10GPa, 79-248; atmospheric, calibration, 79-2329; pressure-dependence of rock strength, 79-3599; pressure-solution at grain-to-grain contacts, 79-2271; pressure-solutionredeposition, early theories, 79-1304

Priorite, Switzerland, 79-4378

Pristane, configuration in sediments and petroleum, 79-2546; pristant/phytane ratios in sediments from Labrador shelf, 79-3861

Promethium, natural occurrence, 79-410 Proterozoic stratiform mineralization, tectonic controls, 79-1155

Protodolomite v. dolomite

Protoliths, China, of metamorphic Fe-bearing formation, 79-3043

Proton fluxes, solar, 79-568

-induced X-ray emission in geochem., 79-3225

Proustite, France, 79-1886

Psammites, New York, age detn., 79-1025

Pseudobrookite, structural coherency with hematite, 79-3394

Pseudomalachite, DTA, TG, 79-680; New South Wales, 79-3103

Pseudo-quaternary system, natural rock projection, 79-2324

Pseudorutile, Western Australia, 79-3101

Pseudotachylytes, fracture or fusion formation, 79-1824

Psilomelane, in manganese nodule, 79-426 Pyribolites, Italy, distinction from metanorites, 79-4191

Pyrite, crystal forms, 79-2845; transitionmetal bonding, 79-3402; electron density, 79-3349 (18); lineage and sectorial structure, 79-1125; IR study, 79-4335; oxidation, 79-1324; presevvation of specimens, 79-1988; solubility of univariant assemblage pyrite + pyrrhotite + magnetite, 79-2351; Norway, 79-823; Sweden, fram-

biodal, 79-221; Spain, study of glide elements, 79-1124; Belgium, aggregates of crystals, 79-736; Germany, trace elements in, 79-741; Switzerland, 79-1891, 3095; 4376, 4378; Italy, in skarn-sulphide deposit, 79-3515; Poland, 79-2189, 2850, 4089; USSR, mosaic growth on megacrysts, 79-2847; pyrite-polymetal deposit, structure and genesis, 79-2211; mineralization in conglomerate, Precambrian 79-2193; Turkey, anisotropic, 79-737; octahedra, 79-3098; Greece, with dominant diploid form, 79-4091; Namibia, 'gel pyrite', 79-738, South Africa, S isotopic ratios, 79-3233 (II.5); *India*, textures from pyrite-pyrrhotite orebody, 79-223; *Pakistan*, ore microscopy, 79-740; *Japan*, dendritic, morphology and growth process, 79-4092; New South Wales, euhedral and framboidal, is base-metal sulphide ores, 79-2844; Tasmania, cleavage in, 79-3062; New Zealand; 79-1672; Greenland, 79-British 79-232: 2849; Columbia, Massachusetts, rapid formation in salt marsh, 79-2242; Nebraska, framboidal, in Cretaceous shark enterolith, 79-2846; Ohio, framboids from coal, 79-1807; Washington, 79-3106, 3119

Pyroaurite, China, chrom-pyroaurite, anal.,

opt., X-ray, 79-2866

Pyrochlore, synthetic, crystal structure, 79-1133; Zaire, kalipyrochlore, new mineral, chem., opt., X-ray, 79-1650

Pyroclastic flows, model of generation, movement, emplacement by column collapse, 79-1746; California, 79-1768

Pyrolusite, 79-1370; Alabama, 79-3117

Pyrometamorphic rocks, Ireland, at dolerite plug contact, 79-1814

Pyromorphite, France, 79-1199

Pyrophyllite, high-temp. heat capacity, 79-3558; dehydration reactions, 79-2394; solubility in water, Gibbs energy, 79-364; ferric analogue, 79-2014 (1.5); synthesis of mixed-layer pyrophyllite/smectite, 79-2014 (4.5)

Pyrostilpnite, Japan, anal., X-ray, 79-2860 Pyroxenes, electrical conductivity, 79-4343; distribution, 79-3349 (15);electron variations of absorption spectra, 79-4344; symmetry relations and disorder, 79-3349 (24); structural relationships, 79-3349 (29), 3367; crystal-field detn. of Fe<sup>3+</sup>, 79-150; structure refinements, 79-2105; alkali, structural variations, 79-2106; C2/c, thermal expansion, 79-1865; thermal treatment, 79-306; subsolidus phase relations in CaO-MgO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub> system, 79-2384; coexisting pyroxene and garnet, effect of pressure on comp., 79-341; Al, Ti partitioning with garnets and oxides, 79-354; RE partitioning with garnets and melts, 79-3639; pyroxene-liquid interaction in quartznormative basalt, 79-1500; chem. in DSDP Leg 34 basalt, 79-4235; crystallization in alkaline rocks, 79-673; as geothermometer and barometer, 79-349; in Neolithic jade implements, 79-4023; microchem. anal., 79-646; anal., 79-2718; lunar, 79-584, 1495; from lunar basalt, 79-2691; crystallization in mare basalts, 79-511; zoned, 79-520; in lunar breccias, comp. and origin, 79-1515; Norway, from Fe-rich igneous rocks, 79-4022; Finland, 79-819; Scotland,

79-826; from Mull andesites, 79-665; Portugal, 79-831; Italy, 79-921; USSR, Fe<sup>2+</sup> Mössbauer spectra, 79-148; in komatiites, 79-1696; eastern Mediterranean, sodic, from metabasites, 79-2793; Turkey, from ophiolitic rocks, 79-1597; Greece, from gabbros, chem., 79-4192; Africa, Na, K, P, Ti in, 79-4005; Ethiopia, from spinel peridotite xenoliths, 79-2483; South Africa, in kimberlite, 79-3233 (III.2); pyroxene-ilmenite xenolith from kimberlite, 79-3233 (III.8); India, from spinel pyroxenites, 79-2787; New Zealand, 79-1730; Greenland, 79-818; from flood basalts, 79-1695; Arizona, 79-3233 (IV.2); Colorado, in peridotite, 79-3233 (IV.4); New York, 79-3107; manganoan, 79-2795; Guyana Shield, from tholeiitic dykes, 79-668

-, acmite, thermophys. props., 79-1338

-, aegirine, V-bearing, X-ray photoelectron spectroscopy, 79-2790; Scotland, possible authigenic origin, anal., opt., X-ray, 79-1599; Nigeria, 79-836; Brazil, 79-1902

, augite, zoning and hourglass structure, 79-69 (1); Europe, Al-, trace elements in, 79-3233 (V.3); Vesuvius, oscillatory and sector zoning, 79-666; Russian SFSR, 79-901; Turkey, topotactic replacement by omphacite, 79-1598; Japan, dendritic titanaugite in ultrabasic-picrite basalt, 79-2791; Greenland, sub-solidus relations, 79-667; New York, chem., 79-2785

clinoenstatite, Washington, principal stress directions, 79-664

-, clinohypersthene, New South Wales, 79-

, clinopyroxene, X-ray determinative grid, 79-3720; titanian, absorption optics, 79-943; cation site thermal vibration ellipsoids. 79-140; Fe<sup>3+</sup>-, Mössbauer anal., 79-149; thermodynamic props., 79-259; activitycomp. relations in solid solutions, 79-3719; phase relations and solid solutions, 79-3732; reactions at high P and T, 79-3717; RE solubility, 79-285; thermochem, on join CaMgSi<sub>2</sub>O<sub>6</sub>-Mg<sub>2</sub>Si<sub>2</sub>O<sub>6</sub>, 79-2300; garnet and kyanite solubility, 79-3723; Pu-U-Th partitioning, 79-286; partitioning of Cr and Al with spinel, 79-353; geochem. of transition elements, 79-417; from deep-sea basalts, 79-2788; lunar, comp. characteristics, 79-1486; *Norway*, in metadolerite dyke, chem., 79-2764; *Scotland*, 79-4181; Italy, from potassic lavas, 79-3728; Mediterranean area, in ophiolitic metabasalts, 79-4020; Russian SFSR, anal., opt., X-ray, 79-924, 3042; Lesotho, 79-3233 (II.4, 7); from kimberlite, thermal history, 79-3233 (III.3); South Africa, 79-839; New South Wales, 79-3233 (V.1); New Zealand, in Permian volcanic rocks, 79-2491; Labrador, aluminous and titaniferous, from agpaitic rocks, 79-4018; Ontario, from ferroaugite syenite, 79-2789; Brazil, manganoan, 79-1226

diopside, 79-4291; bond length prediction, 79-130; phase equilibria, 79-1272; 2327; chrome-, crystal-field spectra, 79-151; trace elements and Sr isotopes in, 79-1394; diopside-hedenbergite series, X-ray detn., 79-2768; partitioning of transition elements, 79-1283; U and Th partitioning, 79-288; U and Th diffusion, 79-277; Ni and Co Pyroxenes, diopside (contd.)

distribution with coexisting melt, 79-2380, 2381; minima in solid solution solidus temperatures, 79-2382; crystallization in CaO-MgO-SiO<sub>2</sub> system, 79-2371; diopsidepyrope phase relations, 79-2376; diopsideåkermanite system, 79-2377, 2378; diopside-anorthite-albite system, 79-352; fractional crystallization, 79-2379; nephelinediopside system, comp. of residual liquids, 79-373; diopside-spinel equilibria and origin of melilitite and nephelinite, 79-2292; stability of phlogopite with, 79-359; Europe, Cr-, trace elements in, 79-3233 (V.3); Cornwall, 79-1817; Russian SFSR, 79-902; Greece, 79-1837; South Africa, diopside-ilmenite intergrowths from kimberlites, 79-653; Japan, salite, 79-2794, 3044; Massachusetts, 79-2774; New York, elasticity, 79-4345

—, enstatite, hydration rate, 79-2296, 2297; enstatite-pyrope geobarometer, 79-3725; effect of addition on calc-alkaline liquidus phase relations, 79-3729; phase relations, 79-342; stability, 79-3689; in system MgO-SiO<sub>2</sub>-H<sub>2</sub>O, 79-2397; stability of phlogopite with, 79-359; South Africa, megacryst with garnet, 79-3233 (III.7); Mexico, anal.,

79-1356

—, fassaite, in join Fs<sub>85</sub>—En<sub>15</sub>-wollastonite, Mössbauer spectra, 79-152; Russian SFSR, 79-901; Northwest Territories, 79-2782

—, hedenbergite, Sn-rich, from slag, 79-1331; USSR, structure refinement, 79-147; Min-

nesota, Ontario, 79-934

—, hypersthene, Russian SFSR, 79-902; South Africa, in granulites, 79-2158 (10); Japan, anal., opt., 79-2796; New South Wales, from coal-fire buchite, 79-4019; New Zealand, cooling history, Mössbauer spectra, 79-2960

--, jadeite, multicomponent solution theory, 79-260; jadeite glasses, IR and X-ray data, 79-283; *Greece*, jadeite-quartz in glauco-

phane rocks, 79-1838

—, kanoite, *Japan*, new clinopyroxene, anal., opt., X-ray, 79-4118

—, kunzite, induced colour centres, 79-3069
—, lavrovite, USSR, found to be chromian

diopside, 79-4021

—, omphacite, composition limits of cation ordering, 79-4025; P2/n → C2/c transformation, Mössbauer spectra, 79-2383, 3722; Spain, in metabasites, 79-920; Italy, from eclogite, 79-1833, 1834; Turkey, replacing augite, 79-1598; Guatemala and Greece, ordering and exsolution, 79-663

-, orthoferrosilite, New York, X-ray, opt.,

79-2785

—, orthopyroxene, 79-3710; diffuse X-ray reflections, 79-3364; cation distribution from electronic absorption spectra, 79-3365; synthetic, crystal structure refinement, 79-3366; Fe<sup>2+</sup> ion energy on M1 and M2 sites, 79-3363; high-low temp. transition, 79-355; RE solubility, 79-285; coexisting with olivine and spinel, Al<sub>2</sub>O<sub>3</sub> solubility, 79-2375; Norway, in eclogite pods, 79-906; Norway, from anorthositic massif, 79-3724; Spain, Ca-tschermakite, 79-4186; Russian SFSR, 79-3042; anal., opt., X-ray, 79-924; in kimberlite, min., 79-2786; Lesotho, 79-3233 (II.4, 7); South Africa, 79-839;

contact metamorphism product, 79-3037; North America, from anorthosite, 79-853; New York, chem., 79-2785

-, pigeonite, lunar, crystal field studies of Fe<sup>2+</sup> in, 79-521; inverted pigeonite from, 79-1553; *Japan*, relations between temp. and comp., 79-2792; *Greenland*, subsolidus relations, 79-667

-, spodumene, stability fields of spodumene and gallospodumene, 79-2386; Afghani-

stan, 79-2438

violan, Italy, 79-1835
 Pyroxenite, Arizona, inclusions in latite, 79-3233 (IV.1, 2); Tanzania, crystallization and residual glass comp. in nodule, 79-837
 Pyroxferroite, lunar, from anorthosite frag-

ment, chem., 79-671

Pyroxmangite, refined occupancy factors, 79-3369; France, 79-2770; Alps, phase relations in metamorphic assemblages, 79-

670; Brazil, 79-1226

Pyrrhotite, 79-2460; oxidation, 79-1324; in contact metasomatic ore deposits, 79-3462; solubility of univariant assemblage pyrite + pyrrhotite + magnetite, 79-2351; Sweden, 79-221; Switzerland, 79-3095, 4376; with 5c superstructure, 79-2888; Italy, in skarnsulphide deposit, 79-3515; Poland, 79-4089; India, textures from pyrite-pyrrhotite orebody, 79-223; Pakistan, ore microscopy, 79-740; Japan, from pelitic schists, 79-2848; New Zealand, 79-1672; Greenland, 79-2849, 4070; Maine, nickeliferous deposits, 79-805 (13)

Quartz, 79-3705; accuracy and precision of analysis, 79-238; stress-induced Dauphiné twinning, acoustic emissions, 79-4348; comp. of twins of Japan Law, 79-2820; biaxiality, 79-938; thermoluminescence, 79-60; X-ray line profile investigations, 79-166; X-ray petrofabric texture studies, 79-3197; embayed crystals in acidic volcanic rocks, 79-3249 (26); influence of impurities on mechanical props., 79-3593; molecular orbital study, 79-3390; dynamic recrystallization, 79-3595; creep of hydro-79-3601; lytically-weakened crystals, planar deformation features, slip systems, submicroscopic structures, 79-372: stability, 79-3707; hydrogen concentration profiles, 79-704; role of water in quartz deformation, 79-3749; oxygen isotope equilibrium with water, 79-3786; oxygenisotope fractionation in quartz-water system, 79-1296; aluminium-in-quartz geothermometer, 79-1616; thermal effects of contamination, adsorbed water, and annealing, 79-4055; zoned phenocrysts in apogranite, 79-2827; effects of grinding aids on properties, 79-371; IR detn. in grinding wheel dust, 79-2258; IR detn. in clay mixtures, 79-2014 (5.3); 18O/16O partitioning with magnetite, 79-2567; absorption of amino acid-containing organic matter, 79-2555; 'Bristol diamonds', 79-1883; quartzcoesite transition, comparative friction measurements, 79-3566;  $\alpha$ - $\beta$  inversion, unit cell parameters, 79-2819; lattice dynamical study, 79-2412; a-, neutron-irradiated, crystal structure, 79-2416; low-, crystal setting, 79-134; least-squares refinement, 79-3349 (14); structure investigation up to 70 kbar, 79-3349 (71); Norway, 79-823;

Scotland, orientation patterns, 79-3027; Avon, 79-1882; Derbyshire and Staffordshire, surface features, 79-2994; France, decrepitation rate, 79-1041; deformation of granodiorite, 79-1829; plasticity, 79-3602; Portugal, from tungsten deposit, fluid inclusions in, 79-2181; Germany, quartz hematite veins, 79-2468; Austria, fluids inclusions in, 79-3792; Switzerland, 79-1891, 1894; Friedlander- and Bambauertypes, 79-3093; Poland, smoky, crystallization conditions, 79-1617; Greece, jadeitequartz in glaucophane rocks, 79-1838; New Caledonia, pyramidal crystals, 79-703; Japan, homogenization temp. of liquid inclusions, 79-1211; Australia, weathering under subtropical conditions, 79-887; New South Wales, grain surface features, 79-3006; Western Australia, fabrics in mylonite, 79-1841; Australia and USA, pressure fringes, 79-3048; New Zealand, 79-1672; USA from wind-erosive soils, O isotope ratios, 79-419; in modern fluvial muds and 79-896; Arkansas, 79-3115; sands, Colorado and Utah, 79-1810; Georgia, grain surface features, 79-3016; South Carolina, smoky-, 79-4388; South Dakota, weathered and stream-transported grains, Rb/Sr ages, 79-1966; Virginia, 79-1741; Washington, 79-3106, 3119; Gulfs of Mexico, isotopic exchange in quartz silt, 79-2534; Brazil, rose quartz, 79-1903; Japan-law twins, 79-3120

—, amethyst, synthetic, 79-1361; stepped dislocations in crystals, 79-1344; formation conditions, 79-369; *Poland*, 79-1360; *Queensland*, 79-1358; *Brazil*, 79-3765

-, chrysoprase, Queensland, 79-2429

Quartzite, deformation, 79-954; compressional and shear wave velocities, 79-4355; France, geochem. model of origin, 79-1420 Queitite, Namibia, new mineral, anal., opt., X-ray, 79-4121

Radioactive elements, *Norway*, in Homme granite, 79-450

—, minerals, detection and assay, 79-1157

—, waste, eastern Atlantic, fracture zones as potential disposal sites, 79-1258; Gabon, shale as repository, 79-1254

Radioactivity, USSR, of igneous rocks, 79-2485; Antarctica, 79-1189

Radiolarites, *Italy*, related to subjacent "oceanic crusts", 79-2975

Radionuclides, New Zealand, in soils, 79-2610; Massachusetts, ratios in wet and dry depositional samples, 79-1468

Radium, extraction from seawater, 79-3880; <sup>228</sup>Ra near-surface variation in *Gulf of Mexico*, 79-3881

Radon, in water, radiochem. detn., 79-2261; Devon, in stream waters, 79-1460

Rajite, New Mexico, new mineral, anal., opt., X-ray, 79-2889

Raman spectroscopy, Ge co-ordination in crystals and melt of GeO<sub>2</sub>, 79-3611; structure of glasses and melts of Na<sub>2</sub>O.xSiO<sub>2</sub>, 79-3615; melts along SiO<sub>2</sub>-NaAlSiO<sub>4</sub> join, 79-3616; structure and coordination of Al in NaAlSi<sub>2</sub>O<sub>6</sub> glasses, 79-3617

Rammelsbergite, *USSR*, chem. comp. and zoning, 79-748

Ramsayite, Victoria, in pegmatoidal clot, 79-1722

Rancieite, Austria, 79-3097; Greece, associated with karstic bauxite deposit, chem., X-ray, 79-1629; Atlantic Ocean, in manganese microconcretions, 79-4084

Rankinite, Japan, crystal structure, 79-2100;

орт. Х-гау, 79-2775

Rapakivi texture, pressure quench formation, 79-2323

Rare earth compounds, oxides, non-stoichiometric phases, 79-1314; Y and RE formates and dihydrates, X-ray, 79-3429

elements, NAA detn. in rock standards, 79-2644; in standard K-feldspar, 79-2622; in diorite and granite reference samples, 79-2626; detn. in geol. reference samples, 79-2630; comparison of NAA data, 79-3907; content in spheres related to host rocks, 79-1587; constraint on mantle partition source comp., 79-1379; coefficients in chloride-containing vapour phase and silicate melts, 79-1275; behaviour during formation of alunite, 79-307; mobility during hydrothermal alteration of basalts, 79-444; partitioning between minerals and silicate liquids, 79-285; between immiscible carbonate and silicate liquids and CO<sub>2</sub> vapour, 79-3638; between garnets, pyroxenes, melts, 79-3639; between hydrous silicate melt, amphibole, and garnet peridotite minerals, crystal-vapour 79-2312; partition coefficients, 79-3634; related to iron formations and sea-water, 79-2448; abundances in chondritic meteorites, 79-2725; Norway, distribution in plutonic complex, 79-1397; Scotland, in high-grade Archaean complex, 79-1445; in water lily, 79-1248; Corsica, distribution in ophiolitic metabasalts, 79-2478; Poland, in phosphate nodules. 79-2516: Atlantic Ocean, behaviour during basalt weathering, 79-3826; Egypt, in Nile Valley phosphorites, 79-2518; Taiwan, geochem. of ignous complex, 79-3823; in deeply buried Gulf Coast sediments, 79-2537; Ontario, in layered komatiite lava flow, 79-466, 1413; in Huronian sedimentary rocks, 79-3852, 3853; Chile, petrogen. of ignimbrites, 79-3837; Peruvian Andes, in Late Cainozoic lavas, 79-470

— mineralization, in zones of tectonic and alkali metasomatic activity, 79-1156

— — minerals, Pennsylvania, 79-981

Rare gases, diffusion from lunar fines, 79-2651 Rasvumite, *California*, age detn., 79-1

Realgar, 79-329; Corsica, 79-3475 Reciprocal solid solutions, thermodynamic

props., 79-259

Red beds. Scotland role of hiotite in genesis

Red beds, *Scotland*, role of biotite in genesis, 79-2991

RED SEA, geophys, data, 79-4360; commission report, 79-3480; amorphous Cu and Zn sulphides in metalliferous sediments, 79-2191; metalliferous sediments, 79-3481; geophys. exploration techniques, 79-3482; *Qoseir*, geochem. of *Hamadat* granitoid pluton, 79-3818

Reference frames, 79-473, 474

Reflectivity, role in gemmology, 79-404; between parallel polars, 79-1972

Refractive indices, calculation with spindle stages, 79-38; indirect detn. in biaxial crystals, 79-3193; measurement in thin section, 79-3192 Refractories, origin and melting, 79-2287; Pakistan, mineralogy, chem. of deposits, 79-1239

Refractory materials, behaviour in D.C. arc plasma, 79-2013 (1.4)

Remote sensing, book, 79-1068

Resistivity, measurement at high T and high P, 79-2281

Resources and Energy, new journal, 79-3543 Réunion I. v. Indian Ocean

Rhapdophane, Virginia, 79-1741

Rhenium, in nickeliferous lateritic profiles, 79-1383; Central Asia, behaviour in combustible shales, 79-1427

RHODESIA, 2-9 b.y. event in Archaean, 79-3159; emerald occurrences, 79-387; central zone of Limpopo mobile belt, 79-2901 (5); granulite-facies metasediments, 79-2901 (12); Express nickel sulphide deposit, 79-3445; Miami pegmatite, euclase, 79-1352; Richardson's Kop wolframite deposit, 79-2158 (8); Sinoia area, structure of Lomagundi group, 79-2158 (29)

Rhodium compounds, Rh<sub>2</sub>ReO<sub>6</sub>, prepn. and

characterization, 79-326

Rhodochrosite, Alps, phase relations in metamorphic assemblages, 79-670; South Africa, chem., opt., 79-2865; Japan, 79-2864; Brazil, calcic —, 79-1226; Peru, 79-3119

Rhodonite, refined occupancy factors, 79-3369; France, 79-2770; Alps, phase relations in metamorphic assemblages, 79-670; New York, magnesian, crystal chem.,

X-ray, 79-2795; Brazil, 79-1226
Rhyolites, mineralogy, chem., 79-3231 (2);
Lake District, Rb/Sr whole-rock isochron,
79-1943; Italy, biotites from, 79-685;
Japan, major and trace element geochem.,
79-2488; Victoria, Palaeozoic, petrogen.,
79-1720; Ontario, anomalous Li in, 792498; Wisconsin, field relations and geochem., 79-1734; Peru, peralkaline, 79-1744

Rhyolitic glass, New Zealand, refractive index and hydration, 79-1761

Richterite v. amphibole

Ringwoodite, in Catherwood meteorite, anal.,

X-ray, 79-2718 RKNFSYS information system, 79-62; search procedures and cost differentials, 79-63; modification of data base, 79-64; extension

Robertsite, Germany, 79-4373

of programme repertoire, 79-65

Rock chem. data, multivariate frequency information, 79-412

-- deformation, experimental study, book

 --- forming minerals, optical determinative tables, 79-3230

Rockbridgeite, Germany, mangan —, 79-758; Alabama, 79-3117

Rodingites, origin in serpentinized ultramafic rocks, 79-3867; *Turkey*, pyroxenes, from, 79-1597; *Greece*, 79-1819; *South Africa*, in Archaean ultramafic complexes, 4283

Rodingitization, *Greece*, behaviour uranium, 79-1447

Rohaite, Greenland, X-ray, 79-4098

Romanechite, intergrowths with hollandite, 79-3396

Roselite, Germany, crystal structure, 79-2140; Morocco, 79-3099

Rosemaryite, new mineral, 79-2876

Rosenbuschite-lavenite, *Portugal*, 79-831 Rostite, *Czechoslovakia*, new name for orthorhombic Al(SO<sub>4</sub>)OH.5H<sub>2</sub>O, 79-4122 Rowlandite, *Texas*, chem., opt., 79-1591

Rubidium, in K-feldspars, 79-696; partition coefficient between alkali feldspar and silicate liquid, 79-1285; USSR, distribution in metamorphics and granitoids, 79-1450; Western Australia, in sedimentary rocks, 79-1424

Ruby v. corundum

Ruizite, South Africa, 79-2865

Ruthenium, in *Greek* chromites, 79-1382

Rutile, 79-1370; electronic structure, 79-3395; electron density distribution, 79-3349 (17); disordered, petrogenic significance, 79-3249 (8); in kimberlite, 79-3233 (III.5); in blueschist and related rocks, 79-1165; rutile deposits, 79-1168; biaxiality, 79-938; Febearing, exsolution of hematite, 79-317; partitioning of Ti, Al with pyroxenes, garnets, 79-354; Norway, 79-823; Switzerland, 79-1894, 3095, 4376, 4379; South Africa, 79-4072; Madagascar, inclusions in cordierite, 79-1593; Colorado, in sillimanite-quartz gneiss, 79-1856, 3504; Bolivia, Sn —, 79-2834

Rynersonite, California, new mineral, chem., opt., X-ray, 79-1655

Sabatierite, Czechoslovakia, new mineral, anal., opt., X-ray, 79-2890

Safflorite, *USSR*, chem. comp. and zoning, 79-748

Sagvandite, *Norway*, petrog. and regional significance, 79-820

Sakhaite, crystal structure, chem., 79-2122 Salmonsite, *California*, mineral discredited, 79-770

Salt, sieving by clay membranes, 79-3283
Samarium, solar isotopic anomalies, 79-2710;
in plagioclase/melt system, 79-1274, 3635;
partitioning between garnets and melts,
79-3696

Sample size, optimization chart, 79-1977 Sampleite, Austria, 79-3096; Western

Australia, chem., opt., 79-757
Sands, locked sands, new engineering material,

rosched sands, new engineering material, 79-4248; Scotland, Holocene, comp. and provenance, 79-2992; resources, Highland Region, 79-1230; Strathclyde, 79-2219; Essex, 79-1232, 2220; Berkshire, 79-2223; Lincolnshire, 79-2221; Oxfordshire, 79-3528; South Yorkshire, 79-2222; France, heavy minerals in, 79-3001; Greece, river, detrital mineralogy, 79-3001; Malaya, in weathered granite, 79-115; Australia, angularity and silica coatings, 79-886; weathering of quartz in dune sands, 79-887; Saskatchewan, comp., grain size, source area, tectonics, 79-3010; Wyoming, Nebraska, comp. in temperature semiarid region, 79-3014; Texas, δ13C food web anal. in sand dune community, 79-2449

Sandstone, influence of interstitial water on brittle failure, 79-3590; diagenesis, recent advances, 79-3236 (3); calcite-cemented, treatment with silicone ester, 79-1034; uranium in, 79-1060 (D.1); U-bearing, Fe-Ti oxide minerals in, 79-4071; Norway, lithostratigraphy and sedimentation, 79-877; Scotland, deposition of Old Red Sandstone, 79-1056 (3.8); heavy mineral distribution, 79-2993; Orkney, uranium in,

Sandstone (contd.)

79-3465; Shetland, Old Red Sandstone intrusive complex, 79-825; Wales, stratigraphy, 79-2995; France, geochem. model of origin, 79-1420; Switzerland, 79-4142; India, classification and mineralogy, 79-3249 (15); Taiwan, metamorphosed highpurity deposits, 79-4266; SE Australia, concretions in, 79-3007; Western Australia, age, 79-1802; sedimentology and petrol., 79-4269; New Zealand, petrol., diagenesis, reservoir characteristics, 79-1805; Quebec, provenance of Ordovician deep-water sandstones, 79-1680; Victoria, fission-track dating, 79-16; Michigan, K-feldspar cement, 79-1609; New York, syndepositional brecciation, 79-3012; Tennessee, creep and strain, 79-3598; Texas, cementation of deltaic sandstone, 79-3015; clay diagenesis, 79-3310

Sanidine v. feldspar Santorini v. Aegean Sea Saponite v. smectite Sapphire v. corundum

Sapphirine, phase relations, 79-342; crystal chem., 79-4025; neutron and X-ray diffraction study, 79-3374; India, 79-927

Saprolite, USA, Mn-Fe coatings on fracture surfaces, 79-121

Sarabauite, Malaysia, new mineral, anal., opt., X-ray, 1656

Sasaite, South Africa, new mineral, anal., opt., X-ray, 79-768

Satterlyite, Yukon, new mineral, chem., opt.

X-ray, 79-4123 SAUDI ARABIA, ages of gneissic rocks, 79-3163; Saudi Arabian craton, zircon method of isotopic dating, 79-3164; Al Hadah, epidotization of diorites, 79-2484; tectonics of Najd transcurrent fault system,

Scandium, Scotland, in water lily, 79-1248 Scapolites, chloride- and carbonate-bearing, stability and phase equilibria, 79-2420; Russian SFSR, 79-902, 3042; Lesotho, 79-3233 (II.4); New York, 79-3107

—, marialite, presence of HCl in, 79-4057 Scawtite, 79-356; synthetic, IR spectrum, 79-344

Schafarzikite, derivative structures, 79-3349 (43)

Scheelite, crystal chem., 79-3341; France, in mica schists, 79-2208; France, in skarn, 79-2767; bituminous, 79-3857; Portugal, 79-3469; deposits, 79-3512; geol. and geochem., 79-2601; Italy, mineral assemblages, 79-4312; Austria, 79-971; Switzerland, 79-1893; Poland, 79-1175; Russian SFSR, scheelite-molybdenite mineralization, 79-2210; isotopic comp. of carbonates from deposits, 79-3791; Japan, garnets from deposits, 79-2765; manganiferous, origin, 79-3044; Northwest Territories, age of mineralization, 79-18; deposits, 79-4032

Schists, Ireland, petrog. and structure, 79-1827; France, failure mechanism, 79-1301; Italy, mafic, mineral parageneses, 79-1833; New Caledonia, coalification and graphitization, 79-3050; Taiwan, glaucophane --, age and geochem. constraints, 79-931; New

Zealand, magnetic, 79-3083 Schoenfliesite, USSR, minerals in series with

wickmanite, 79-4088

Scholzite, South Australia, 79-3102

Schoonerite, Germany, 79-4373

Schorlomite v. garnet

Schreibersite, growth in Emery mesosiderite, 79-2732

Schreyerite, Kenya, new mineral, chem., opt., X-ray, 79-2891

SCOTLAND, thomsonite, 79-4062; IGS boreholes, 1976, 79-791; orthotectonic Caledonides, 79-771 (14); siting of Tertiary vulcanicity, 79-1056 (4.7); ages of feldspars from Caledonian granites, 79-3152; Palaeozoic granites, zircon U/Pb systems, 79-1056 (3.6); Archaean trondhjemitic and tonalitic gneisses, 79-3231 (8); quartzites of Dalradian series, 79-3027; role of biotite in genesis of red beds, 79-2991; micropalaeontological biostratigraphy of coastal samples, 79-4136; geol. and underground storage, 79-3129; trace element content of soils, 79-3324; extractable Ti and V in podzols, 79-2055; NE, mineralogy and heavy metal content of serpentinite soils, 79-1085; NW, ilmenite-magnetite geothermometry, 79-2835; retrogressive metamorphism of granulite-facies gneisses, 79-1444; Proterozoic folds on NW Caledonian foreland, 79-4135; Firth of Forth, geol., 79-790; Glen Garry vein complex, 79-2918; Highland Boundary fault system, 79-1916; Midland Valley, Caledonides, 79-771 (14); Old Red Sandstone deposition, 79-1056 (3.8); heavy minerals in, 79-2993; Orkney, uranium in Old Red Sandstone, 79-3465

-, CENTRAL REGION, Clackmannan syncline, high-alumina fireclays, 79-1228

DUMFRIES AND GALLOWAY, Drummore, paratacamite, 79-792; Eskdalemuir Observatory, magnetic survey, 79-3081, Langholm, Pb-Zn mineralization, 79-1170; Loch Dow, Sc, Y, RE contents of waterlily, 79-1248; Water of Luce, dissolved humic acids, 79-239

GRAMPIAN; Aberdeen, Bridge of Don, crystalline manganese oxides, 79-2162; Grampide andalusite/kyanite isograd, 79-4295; Stonehaven, garnet and biotite in metamorphic zones, 79-3028

-, HIGHLAND REGION, sand and gravel resources, 79-1230; metamorphism and fault displacement, 79-3029, 3030; Assynt, age of Loch Borrolan complex, 79-3150; Ben Nevis ring intrusion, plagioclase zoning, 79-699; Caithness, aegirine in Middle Devonian sediments, 79-1599, 3080; age of Glen Dessary syenite, 79-3151; Glen Roy and Lismore, recumbent folds, 79-917; Glenelg inlier, high-pressure cumulate, 79-4181; Loch Duich, anoxic pore water from sediments, 79-1455; Loch Maree, age of Lewisian metasediments, 79-914; Loch Shiel, marine regress and overlying gyttja, 79-1942; Loch Sunart, Recent dolomitic concretions, 79-1789; Inner Hebrides, Rhum, Tertiary igneous rocks, field guide, 79-4180; melting relations of parent magmas, 79-3646; olivine oxidation in intrusion, 79-2748; cryptic layered variation, 79-826; Scourie, Late Archaean metamorphism, 79-4296; palaeogeotherms, 79-4297; Skye, flood basalt pile and dyke swarm, 79-1770; harkerite, 79-2122; South Morar, zoning in metamorphic garnets, 79-1589; homogenization, Sutherland, seismic refraction survey, 79916; deformation on Laxford shear zone, 79-1662; Moine amphibolite suites, 79-3025

-, LOTHIAN, oil-shales, 79-1229

-, SHETLANDS, regional geochem. atlas, 79-2012; sulphide nodules and lacustrine sediments, 79-2161; Lerwick Observatory, magnetic survey, 79-3081; Northmaven, Old Red Sandstone intrusive complex, 79-825; Lunnister metamorphic rocks, 79-

-, STRATHCLYDE, northern Argyll, Permo-Carboniferous dyke-swarm, 79-1698; Ballantrae complex, geol. of continental margin, 79-1056 (3.3); Clyde area, solid geol., 79-789; gravity and magnetic studies, 79-789 (2,3); seismic studies, 79-789 (4, 5); bore holes and outcrop sampling, 79-789 (b); Coll and Tiree, RE in high-grade gneiss complex, 79-1445; Darvel, sand and gravel resources, 79-2219; Girvan, Ordovician transgression, 79-1056 (3.4); Girvan-Ballantrae, gravity and magnetic anomaly, 79-1056 (3.5); Glasgow, borehole, 79-2897; Irvine area, borehole, 79-2897; Islay region, strain study of Caledonides, 79-3026; Kintyre, geophys. studies, 79-789 (7); Mull, sheath and core structures in pitchstones, 79-4218; Holocene sands, 79-2992; Early Tertiary lava-pile, 79-452; pyroxenes from andesites, 79-665; RE distribution in basalts, 79-444; chilled margin of Ben Buie layered gabbro, 79-3806

-, TAYSIDE, heavy mineral content of

streams, 79-4251

-, WESTERN ISLES, Outer Hebrides, Barra, hornblende twinned on (IOI), 79-3070; Lewis, minor intrusions in Lewisian gneisses, 79-915; Harris, Lag MaGodron, Lewisian gneiss, 79-792

Sedimentary basins, developments, 79-987

environments and facies, book, 79-2015

- rocks, diagenesis in, book, 79-3239; quantitative clay mineralogical anal., 79-3250; Canary Is., Late Mesozoic, 79-3003; Western Australia, precious metal values, 79-2524

Sedimentation, rates in deep-sea cores, 79-2004; South Africa, tectonic control., 79-

Sediments, clay minerals in, 79-2014 (3.1); DSDP site 323, alteration of volcanic material in, 79-3819; particle-size separation, 79-3252; identification of gypsum in, 79-3217; diagenesis in, book, 79-3239; Recent, stereochem. relationship, 79-2556; anoxic sediment reactions, 79-2504; configuration of pristane in, 79-2546; carbonate and non-carbonate, amino acids, in organic matter, 79-2554; Mn and Fe oxides in, adsorption of Co and actinides, 79-2255; accumulation rates, alpha track method, 79-1431; pelagic, biol. matter as source of authigenic matter, 79-477; freshwater, extractable and bound lipid components, 79-2541; chem. exchange across sediment-water interface, 79-71 (13); Denmark, influences on B, Li, Rb content, 79-1095; Irish Sea, Quaternary, 79-880; Germany, Y and Zn as geochem. guide, 79-2607; Danube R. delta, mineral comp., 79-2999; USSR, organic matter distribution, 79-2562; Baltic Sea, anoxic, mineral phases in, 79-3863; Tadzhik

Sediments (contd.)

depression, Rb and Cs geochem., 79-1426; Red Sea, metalliferous, exploration, 79-3481; on SW African shelf, steranes in, 79-2557; metalliferous, SW Pacific, regional geochem. survey, 79-500; Pacific Ocean, 79-425; Taiwan, diluvial, weathering state, 79-2067; W Greenland, carbon isotope geochem., 79-2509; Labrador and Greenland continental margins, provenance, 79-1682; British Columbia, interstitial water chem., 79-2592; Northwest Territories, comp. and reactivity, 79-1425; Alaska, As in, 79-2606; Long Island Sound, clay minerals as indicators of source, 79-2063; Gulf of Maine, hydrocarbons in, 79-2547; Michigan, geochem., 79-3844; Texas. sterols in, 79-2549

-, estuarine, diagenesis of fatty acids and isoprenoid alcohols, 79-3864; North Carolina, trace elements in, 79-1429

Carolina, trace elements in, 79-1429
—, lacustrine, migration of <sup>137</sup>Cs, 79-2505; early diagenesis of fatty acids, 79-2559; Scotland, palaeomagnetic, min. studies, 79-3080; Switzerland, formation of iron phosphate, 79-2513; Egypt, geochem., 79-2517; mech. anal. and mineralogy, 79-1797; Canada, location of uranium deposits, 79-1481; British Columbia, sedimentation rates, 79-3549; California, metal fluxes in, 79-2538

—, marine, detn. of organic carbon, 79-3216; stable isotope distribution, 79-3848; anisotropy of magnetic susceptibility variability, 79-4363; trace elements in silicate spherules, 79-2526; amino acid stereochemistry, 79-2545; dissolved Al in interstitial water, 79-3876; K and Ca isotopes in magnetic spherules, 79-4000; South Australia, heavy metal distribution, 79-3849.

—, stream, Belgium, geochem. exploration for Mn, Ni, Cu, Pb, Zn, 79-1479; W Germany, mineralogy and heavy metal contents, 79-2064; Botswana, derived from granite, 79-2605; British Columbia, geochem. data, 79-1483

Seinäjokite, Greenland, 79-2849

Seismic activity, IGS file, use for hazard assessment, 79-1929; discontinuity at 650 km, 79-4357

Seismite, *India*, occurrence in Precambrian rocks, 79-4393

Seismograms, synthetic, 79-3236 (16)

Selenium, geol., bibliog., 79-3447; as indicator element in geochem. exploration, 79-501; hydrogeochem., 79-3882; low levels in tephra-derived soils, 79-2262

-compounds, Se<sub>3</sub>S<sub>5</sub>, crystal structure, 79-3410

Semenovite, crystal structure, 79-3384 Senarmontite, *Greenland*, 79-4098

Sepiolite, 79-358; crystal structure, 79-2113; surface props., 79-2014 (2.1); IR study of surfaces, 79-2014 (2.10); alteration, 79-362; thermal anal., 79-2037; effect of dehydration on specific surface area, 79-1079; transformation sepiolite = loughlinite, 79-2038; Ni-containing, 79-2815; *Poland*, morphology, 79-3298; *Spain*, evolution of surface area, 79-2050

Serendibite, Northwest Territories, anal., opt., X-ray, 79-2782

Sericite v. mica

Serpentine, 79-358; D/H fractionation with water, 79-293; effect of Al on IR spectra, 79-2801; textures and serpentinization, 79-4040; boron content, 79-3781; Ni-bearing, 79-2815; idealized model for textures, after olivine, 79-4041; tremolite- and diopsidebearing assemblages, 79-4291; *Italy*, from veins in serpentinite rocks, 79-2812

Serpentinite, NE Scotland, in soils, 79-1085; Italy, serpentine minerals in veins, 79-2812; Poland, 79-1360; Russian SFSR, huntite in weathering crust, 79-755; Ethiopia, nickeliferous, chem. and min. development, 79-1206; Japan, tourmaline-chlorite rock association, 79-904

Serpentinization, in ophiolites and oceanic crust, 79-2976; kinetics of hydration reactions, 79-2297

Serpierite, Germany, 79-2862

Shachialite, *China*, new mineral, anal., 79-1659

Shackanite, *British Columbia*, and related analcite-bearing lavas, 79-1710

Shales, black, uranium in, 79-1060 (D.2); bituminous, indicators of transgressions and regressions, 79-2990; Norway, Triassic black shales, major and minor element chem., 79-3866; Devon, clay mineral studies, 79-2062; Poland, mottled series of Carpathian Flysch, 79-2073; Central Asia, behaviour of Re and other metals, 79-1427; Western Australia, depositional environment and age, 79-1802; Illinois, geochem. standard, 79-1371; Texas, clay —, geotechnical props., 79-3295

—, oil, thermal diffusivity, 79-3075; biogenic-chem. stratified lake model for origin, 79-1428; Green R., electrical conduction, 79-2169; Scotland, present resources and former workings, 79-1229; England, occurrences in Kimmeridge Clay, 79-471; Israel, thermal effects, 79-3313; New Zealand, DTA study, 79-4270; Utah, changes in mineralogy on heating, 79-1299; Brazil, stratigraphic anomalies in hydration distribution, 79-1437

Shandite, crystal structure of mineral and related compounds, 79-192

Sherwoodite, crystal chem., 79-1144

Siderite, series with magnesite, opt-identification, 79-1971; France, pseudomorphosed by hematite, 79-1637; Czechoslovakia, ore formation related to Alpine metamorphism, 79-4303; Japan, 79-2864

Siegenite, Missouri, 79-2852

SIERRA LEONE, Al solubility in soils of humid tropics, 79-2083

Silcrete, inland Australia, petrog. study, 79-1803

Silica, compatibility relationships, 79-3741; high-pressure modification, X-ray, 79-2413; cation-cation distances in polymorphs, 79-167; variation in bond lengths, 79-2089; estimation in bauxite, 79-3211; mixed oxides with alumina, point of zero charge, 79-3286; biogenic, in Pinaceae, 79-1438; silica tubes, synthesis in system FeO-Fe<sub>2</sub>O<sub>3</sub>-TiO<sub>2</sub>, 79-3579; dissolved in *Lake Superior*, 79-2256

Silicates, AAS detn. of Ca and Mg, 79-1993; crystal chem., 79-1102; Si-O-Si configurations, 79-1103; framework, structural classification, 79-1115; structures with branched anions, 79-1109; variation in bond lengths, 79-2089; orthosilicates, electronic polarizabilities, 79-1105; electricfield gradients and polarizability of oxygen ion, 79-137; crystal structure and compressibility, 79-3591; crystal-chem. classification, 79-3349 (73); forbidden structure types, 79-3349 (33); dark carbonbearing, laboratory polarimetry, 79-587; multicomponent exchange and diffusion, 79-3787; silicate-sulphide liquid immiscibility, 79-2303; equilibria in Ca-Fe-Si skarn deposits, 79-309; iron-bearing, volatilization in presence of carbon, 79-305; refractory, condensation of nonequilibrium phases from vapour, 79-2415; fluor-silicate systems, liquid immiscibility, 79-3626; intercalation compounds of KHSi<sub>2</sub>O<sub>5</sub> and H<sub>2</sub>Si<sub>2</sub>O<sub>5</sub>, 79-2014 (6.3)

Silicate melts and magmas, physics and chem., 79-2313; structure, 79-2314; melting of hydrous phases, 79-281; viscosity, 79-282; thermodynamics, 79-257; cation diffusion, 79-284; nickel partitioning, 79-291; partionining of Ni<sup>2+</sup>, Co<sup>2+</sup>, Fe<sup>2+</sup>, Mn<sup>2+</sup>, Mg<sup>2+</sup>, with olivine, 79-2310; hydrous, *RE* partitioning at upper mantle *P* and *T*, 79-2312; diffusion of Ca in, 79-3618; self diffusion, 79-3619; solubility of sulphur, 79-3613; structural role of ferric iron, 79-2319; immiscibility in magmas, 79-2320

— metasomatism, experimental modelling, 79-3587

— spherules, from oceanic sediments, trace elements in, 79-2526

— systems, crystal growth rates, 79-2318; shift of liquidus boundaries, 79-295

Silicified wood, Arizona, organic geochem., 79-2550

Silicon, bond parameters, 79-3349 (20); Si-O bond lengths in Si-O tetrahedra, 79-3350; at high-pressure, crystal chem., 79-1270

— compounds, silicon carbide, number of distinct polytypes, 79-3340; SiC,  $\beta \rightarrow \alpha$  transformation, 79-1329, 1330; hydrogen diffusion and solubility, 79-313; IR detn. in grinding wheel dust, 79-2258; hot-pressed Si<sub>3</sub>N<sub>4</sub>, impurity phases, 79-1327; solubility of Mg in  $\beta$ -Si<sub>3</sub>N<sub>4</sub>, 79-1328

Sillimanite, neutron diffraction study, 79-145; X-ray photoelectron spectroscopy, 79-144; elasticity and crystal structure, 79-942; thermal transformation, 79-3700; enthalpy change of andalusite-sillimanite reaction, 79-1333; melting reactions in aluminous metapelites, 79-2328; Norway and USA, state and location of Fe in, 79-3358; Zambia, in borosilicate rock, 79-2780; Sri Lanka, cabochons, opt., 79-2433

Silver, content of USGS standard rocks, 79-2633; in rock reference samples, 79-2613; freezing point as radiation pyrometry standard, 79-2282; solid sampling detn. in silicate rock reference samples, 79-1995; Queensland, supergene enrichment, 79-1187

— deposits, France, 79-3509; Japan, 79-1182; Queensland, folding in Ag-Pb-Zn orebodies, 79-2214

--, native, France, 79-1886; Greenland, antimonian, 79-4098

Silt, Malaya, in weathered granite, 79-115 Sinhalite, structural morphology with chrysoberyl, 79-2092 Size distribution of mineral crystals, 79-256 Skarn-type ore deposits, zoning in, 79-3462 (3); Ca-Fe-Si deposits, silicate-sulphide equilibria, 79-309; influence of fluorine on, 79-310; Italy, genesis, 79-3515; Nevada, geol., geochem. of ore body, 79-3526

Sklodowskite, Switzerland, 79-1890

Skutterudite, crystal structure, 79-177; transition metal bonding, 79-3402; Morocco, 79-3099

Slates, Nova Scotia, age studies, 79-28

Slaty cleavage, evolution in relation to diagenesis and metamorphism, 79-3020

Slocum stone, imitation opal., 79-2440 Smectite, diagenesis of illite from, 79-104; diagenesis and sandstone diagenesis, 79-3310; charge distribution in structure, 79-159; homoionic, study of residual water in, 79-2026; sodium smectite solutions, coagulation and mixed-layer formation, 79-2014 (2.4); synthesis of mixed-layer pyrophyllite/smectite, 79-2014 (4.5); Fe ---, behaviour in reducing environments, 79-2065; dioctahedral, reaction series, 79-2036; dissolution in HCl, 79-2035; estimating standard free energies of formation, 79-2305; Na-, rheological props. and drystate b dimension, 79-3268; Ni-bearing, 79-2815: Germany, in Oligocene bituminous shale, 79-1818; Utah, trioctahedral, in Green R. formation, 79-3303

-, beidellite, Na-, Ca-, and Mg-, thermo-dynamic props., 79-2398; France, crystallization from plagioclase and amphibole precursors, 79-102; Japan, Fe-rich, anal.,

79-98; chem., 79-97

-, hectorite, position of Ba in structure, 79-158; 2114; ion exchange and intersalation reactions, 79-2041; characterization of tris (2,2'-bipyridyl) ruthenium (II) on, 79-2042

, montmorillonite, XRD identification, 79-82; Fe-rich impurities, Mössbauer, EPR study, 79-1081; alteration, 79-362; K fixation, 79-86; K fixation and structural reorganization, 79-2014 (1.4); effect of F on surface props., 79-3288; structural changes due to heating, 79-3383; montmorillonite-organic complex, electrical conductivity, 79-3294; adsorption of  $\alpha$ -amino acids, 79-1075; adsorption of Naliphatic alchohols on, 79-2045; Cu-, modification of sorption props., 79-3289; adsorption of anilines in aqueous suspensions, 79-3292; adsorption of chlordimeform by, 79-2014 (2.13); acceleration of aldehyde decomposition in soil, 79-3317; interaction between L-glutamic acid and water-montmorillinite system, 79-2046; interaction of porphyrins and metalloporphyrins with, 79-2014 (2.12); poly-amine complexes of transition metal ions, 79-2014 (2.11); acid-leached, Rb/Sr systematics, 79-2032; montmorillonite-hydroxy aluminium phosphate complex, 79-3287; dehydroxylation of monoionic forms, 79-3277; dynamics of interlamellar water, 79-2014 (2.3); interaction with Roundup (glyphosate), 79-3272, 3273; release of Al, 79-3259; distinction of Cheto- and Wyoming-types, 79-3256; Na-, swelling, surface area, and b dimension related, 79-2027; Ca-, pore size distribution, 79-2014 (2.5); K-Ca-, exchange props. and

crystallographic characteristics, 79-2014 (2.7); West Sussex, Ca-, anal., 79-2053; Surrey, associated with kaolinite in Lr. Cretaceous, 79-2014 (3.7);illite/montmorillonite interlayer mineral, 79-3299; Japan, anal., 79-116; mixed-layer illite-montmorillonite, 79-117; Zealand, 79-1672; British Columbia, 79-120; USA, solubility product in acid aqueous soln., 79-88; USA, stability product in acid aqueous soln., 79-88; Wyoming, cation-substituted, IR spectra of dimethyl sulphoxide adsorped on, 79-2048; oxidation of acetaldehyde by, 79-2044

-, nontronite, Fe-for-Si substitution, 79-87; effect of Fe<sup>2+</sup> on absorption spectra, 79-2014 (1.7); reduced, IR and Mössbauer study, 79-3265; Lake Chad, formation in recent sediments, 79-110; Alberta, from

iron deposit, anal., 79-2821

, saponite, Japan, chem., 79-711; Poland, chem., 79-4043

Smithite, 79-79-331

Smythite, Poland, 79-4089

Sodalite, anhydrous, IR spectra, 79-1119; crystal growth and ferroelectric props., 79-3349 (57); hydrosodalite, crystal structure, 79-1120; sodalite minerals, IR study, 79-4349; thermal expansion, 79-4350; Portugal, 79-831; Greenland, 79-818; Brazil, 79-1902

Sodium, solid soln. in leucite, 79-3751; diffusion in obsidian, 79-1284

compounds, extinction in sodium fluoride, 79-2147; NaCl, electronic valence charge density, 79-2090; boiling solutions, props. of H<sub>2</sub>O component, 79-3570; props. of coexisting phases, 79-3571; volumetric props. of aqueous soln., 79-3572; NaCl, Na<sub>2</sub>SO<sub>4</sub>, solubilities, 79-3680; NaClO<sub>3</sub>, electrogyration and piezogyration, 79-2148; Na<sub>2</sub>CO<sub>3</sub> and NaCl content of clays, 79-85;  $Na_2[B_4O_6(OH)_2]$ , crystal structure, 79-3421; NaB<sub>5</sub>O<sub>6</sub>(OH)<sub>4</sub>, 79-1140; sodium pentaborate monohydrate, crystal structure, 79-197; NaNdSi<sub>6</sub>O<sub>13</sub>(OH)<sub>2</sub>.nH<sub>2</sub>O, new type of Si-O layer, 79-3349 (30); Na2MgSiO4, ionic conductivity, X-ray, 79-4351: phase equilibria Na<sub>2</sub>CaMg<sub>5</sub>Si<sub>8</sub>O<sub>22</sub>(OH)<sub>2</sub>-Na<sub>2</sub>CaFe<sub>5</sub>O<sub>22</sub> (OH)<sub>2</sub> pseudobinary, 79-1339; Na<sub>2</sub>ZnSi<sub>3</sub>O<sub>8</sub>, crystal structure, 79-165, 2123; high-pressure NaAlSiO<sub>4</sub>, calcium ferrite isotype, 79-1346; structure of glasses and melts of Na<sub>2</sub>O.xSiO<sub>2</sub>, 79-3615; structure of melts on SiO<sub>2</sub>-NaAlSiO<sub>4</sub> join, 79-3616; structure and coordination of Al in NaAlSi<sub>2</sub>O<sub>6</sub> glasses, 79-3617; Na<sub>2</sub>HPO<sub>4</sub>.2H<sub>2</sub>O, crystal structure, 79-207

Sogdianite, chem., 79-397; South Africa,

chem., opt., 79-2434

Soils, hydromorphic, mineralogy, bibliog., 79-127; particle-size anal., 79-80; particlesize separation, 79-3252; surfaces of soil particles, 79-1059 (4); tropical, mineralogy, bibliog., 79-125; hydraulic conductivity, 79-100; neutron activation anal., 79-83; detn. of trace metals by AAS, 79-3255; chem. of constituents, 79-1059 (1); mixed system, cation exchange equilibria, 79-3278; Mn and Fe oxides in, adsorption of Co and actinides, 79-2255; adsorption and extractability of Mo, 3322; elemental distribution in light mineral isolates, 79-3319;

comparisons of organic matter by pyrolysis mass-spectrometry, 79-3318; detn. of total sulphur in, 79-2021; moisture detn. using microwave radiation, 79-2025; acceleration aldehyde decomposition montmorillonite, 79-3317; in arid watershed, mineral weathering, 79-3308; identification of gypsum in, 79-3217; gypsiferous, cation exchange capacity, 79-81; suspension pH and Zn solubility, 79-3326; phosphorus distribution, 79-3327, 3328; clayrich, cation-exchange capacity, 79-3279; chem. of soil organic colloids, 79-1059 (3); mobility of soil colloids, 79-3270; mobilities of Ni(II), Cu(II), Cd(II), 79-3323; tephraderived, low Se levels, 79-2262; agricultural, lead pollution, 79-3544; *Scotland*, trace element content, 79-3324; NW Pembrokeshire, distribution of chem. elements, 79-2254; Italy, dynamics of Ni, Cr, Zr, and Cu in pedogenesis, 79-3895; West Germany, behaviour of Mn in, 79-89; mineralogy and heavy metal contents, 79-2064; Hungary, clay mineral comp. and K status, 79-2014 (4.2); Bulgaria, neutron activation anal., 79-3228; Nigeria, ammonium fixation, 79-109; Sierra Leone, from humid tropics, solubility of Al, 79-2083; India, ferruginous, mineralogy, genesis, classification, 79-2074; South Australia, soil sampling, 79-504; New Zealand, Fe oxides in, 79-2014 (6.8); organo-mineral fractions in, 79-2023; mineralogy of silt fractions, 79-2077; Th/U ratio, 79-2599; radionuclide concentrations, 79-2610; Antarctica, development, 79-124; Nova Scotia, hydrocarbons in, 79-2547; Ontario, lepidocrocite in, 79-3314; USA, Zn, Mn, Cu in soil fractions, 79-3325; Montana, retention of metallic mercury vapour, 79-2611; Pennsylvania, effect of acid mine drainage water, 79-3315; Wyoming, radiocarbon dates, 79-3181; Brazil, element mobility during intense weathering, 79-2539; Peru, reference material, 79-3897

Solar nebula, condensation of Th, U, Pu, and

Cm, 79-632

- system, early accretion processes, 79-614; magnetic fields in 79-562; marker events in early evolution, 79-635

Solomon Is. v. Pacific Ocean

Solubility of minerals at high water pressures, 79-279

Sonolite, France, 79-2770

SOUTH AFRICA, National Institute for Metallurgy, analytical techniques, 79-50; diamond mining, 79-2426; kimberlite garnets and pyroxene-ilmenite intergrowths, 79-653, 654; chem. of micas from kimberlites and xenoliths, 79-2807; role of tonalitic and trondhjemitic rocks in crustal development, 79-3231 (9); supergene alteration of sulphide ores, 79-1154; kaolins, 79-2014 (7.3); sedimentation in Cape fold belt, 79-1799; mineralization of ensialic Damara orogenic belt, 79-2158 (26): and granite genesis associated mineralization, 78-2158 (27); kapillarite, 79-4262; electron microprobe, XRD, spectral studies of 'jades', 79-3368; Barberton Mountain Land, rodingite in Archaean ultramafic complexes, 79-4283; Bon Accord, nickel deposit, 79-2158 (6); cochromite and nichromite, 79-2875;

SOUTH AFRICA (contd.)

Bultfontein, phlogopite-bearing peridotite nodules, 79-12; Bushveld complex, 79-1713; petrogen. significance of chromites, 79-727; solid-state reduction of chromite, 79-2338; Eastern Bushveld complex, Tibearing oxide minerals, 79-4072; Bushveld intrusion, fractionation trends, 79-268; NW Cape Province, regional geochem. survey, 79-2158 (12); in Bushmanland region, 79-2158 (13); Calvina dist., geochem. of Karroo dolerite sills, 79-457; Copperton formation, age and metamorphism, 79-2158 (15); Du Toitspan, phlogopite nodules, 79-12; Frank Smith mine, ilmenite association, 79-3233 (III.6), 4073; djerfisherite and origin of potassic sulphides, 79-3233 (III.9); Grasvally mine and Winterveld mine, chromium ore reference samples, 79-2609; Hotazal, Wessel Mine, sogdianite, 79-2434; Insizwa nickel sulphide deposit, 79-3445; Kakamas, fault pattern, 79-2158 (14); Kalahari manganese field, rhodochrosite and ruizite, 79-2865; Kimberley, ultramafic nodules from pipes, 79-2928; hydroxyapophyllite, 79-2822; Kimberley Reef conglomerates, activation anal., 79-55; Kimberley, Bultfontein, and De Beers mines, polymict peridotites, 79-3233 (II.8); Mamatwan and Wessel mines, manganese ores, 79-2164; Monastery kimberlite pipe, megacrysts from, 79-3233 (III.2); ilmenite nodule associations, 79-3233 (III.4); age of Moodies conglomerate boulders, 79-2158; Murchison Range, antimony deposits, 79-1208; Sb mineralization, 79-2158 (4); geol. and geochem. of Monarch orebody, 79-2158 (5); Namaqualand, ore-bearing potentialities of Okiep basic 79-2158 (19); dispersion intrusives, aureoles and Cu-bearing mafic bodies, 79-2158 (20); Gamsberg zinc deposit, 79-2158 (16); Nababeep dist., geochem. of gneisses, 79-2158 (23); Okiep copper district, steep structures, megabreccias, basic rocks, 79-2158 (17); steep structures and minor structures in gneiss, 79-2158 (18); silicate, oxide, and sulphide mineralogy, 79-2158 (22); magnetic and gravity prospecting methods, 79-2158 (24); remanent magnetization in geophys. exploration, 79-2158 (25); Okiep-Nababeep dist., crystalline rocks, min., isotopic studies, 79-2158 (21); Olifants R. trough, lower zone of Bushveld complex, 79-839; Onverwacht group, oldest marine carbonate öoids, 79-1757; Ir. Orange R. region, isotopic study of Precambrian metavolcanic rocks, 79-3161; Phalabora, reference magnetite ore sample, 79-2603; Potgietersrust, cooperite and braggite, 79-1632; Premier Mine, pyrite, 79-3233 (II.5); garnet lherzolite and garnet harzburgite, 79-3233 (II.6); Roberts Victor kimberlite, grospydite xenolith, 79-3723; diamond-graphite eclogite, 79-3233 (II.1); Southern Cape, melilite basalts, 79-1009; Soutpansberg, metamorphic events in Limpopo complex, 79-2901 (9); Transvaal, southern margin of Limpopo mobile belt, 79-2901 (7); reactions in granulites, 79-2158 (10); O isotope geochem. of cherts, 79-1448; Sibasa dist., detrital baryte in Karroo supergroup, 79-1235; West Driefontain Cave, sasaite, new

mineral, 79-768; Vaal Reef carbon seams, carbonaceous matter, 79-1386; Vredefort structure, spherules on shatter cone surfaces, 79-1583; contact metamorphism of basement granulites, 79-3037; Weltevreden Floors, enstatite megacryst with garnet, 79-3233 (III.7); Weltevreden mine, quench pyroxene-ilmenite xenolith from kimberlite, 79-3233 (III.8); Witwatersrand, stratiform uranium deposits, 79-1060 (D.4); Klerksdorp goldfield, origin of detrital chromites, 79-1624

SOUTH AMERICA, manganese deposits, 79-3432; calc-alkaline andesites and plateau lavas, 79-2503; development of Mesozoic volcano-tectonic rift zone, 79-1783; Andes, comparison with Sumatra,

79-4152

SOUTH WEST AFRICA, paragonite formation and breakdown in pelitic rocks, 79-684; metamorphic rocks and ore deposits, 79-2905; isotopic homogenization of pelitic sediments during metamorphic mineral assemblages, 79-3870; *Ida mine*, idaite, 79-2885; *Onganga mine*, cuprite, optical constants, 79-1861; *Tsumeb*, queitite, new mineral, 79-4121; 'gel pyrite', 79-738; *Walvis Bay*, organic geochem. of diatomaceous ooze, 79-1436; *Windhoek dist.*, Matchless amphibolite belt, 79-2158 (28)

SOUTHERN OCEAN, ages of Islas Orcadas cruise 7 cores, 79-36

SPAIN, mineral occurrences, 79-1898; alpine lherzolites, 79-456; massive sulphide deposits, 79-1174; mineralized granites, 79-1070 (III.12); alteration accompanying gold mineralization, 79-1148; pitted pebble conglomerates, 79-2480; NW, Variscan metamorphism and K/Ar dates, 79-1947; dating of Hercynian orogen, 79-1948; regional metamorphism in Almadén zone, 79-1836; Asturian province, fluorite deposits, 79-3533; Cabo Ortegal, geochem. of mafic-ultramafic complex, 79-3869; Cordoue, serpentinites, NAA, 79-3894; Ebro basin, sulphur in nonmarine evaporite deposits, 79-3856; Galicia, garnet-bearing metabasites, 79-920; Sobrado de los Monjes, olivine with perfect cleavage, 79-2749; Logrono, pyrite, 79-1124; Maladetta, 79-3472; mineral deposits, Ronda peridotite, Ca-tschermakitic ortho-pyroxene, 79-4186; Santander, sphalerite, 79-3606; Sierra de Baza, temp. of rocks during Alpine metamorphism, 79-4302; Teleno Mts., Au deposits in alluvial piedmont, 79-3471; Toledo, sepiolite, 79-2050; Villabona, genesis of fluorite, 79-3531

Spectrochemical standards, prepn. and evaluation, 79-2013 (1.5)

Spectrographic analysis, semiquantitative, analytical precision, 79-3219

Spectrography, emission, photoelectric control of analytical gap, 79-3220; detn. of impurities in metals, 79-3221

Spectroscopy, application to toxicology and clinical chem., 79-2013 (2.4)

Speleotherms, origin of calcite fabrics, 79-753;

D/H ratios for fluid inclusions, 79-2456; Kentucky, stable isotope geochem., 79-422

Sphalerite, opt., 79-4329; Gibbs energy of formation, 79-1319; stability in system

Zn-Cd-S, 79-1320; trace elements in, 79-741; Cu-activated, flotation, 79-946; sphalerite-stannite, solid solution and exsolution, 79-1060 (IV.5); Spain and Yugoslavia, experimental deformation, 79-3606; Germany, geobarometry, 79-4093; Italy, in deposit, 79-3515; skarn-sulphide Switzerland, 79-1891, 3095, 4377; Yugoslavia, S isotopic comp., lattice parameter, Fe content, 79-2462; Japan, 79-1182; homogenization temp. of liquid inclusions, 79-1211; Greenland, 79-2849, 4098; Canada, Zn/Cd ratios, 79-418

geobarometer, experimental extension to 10 kbar, 79-1318, 3668; application to regionally metamorphosed terrains, 79-

2851

Sphene, boron content, 79-3781; lanthanide content related to host rocks, 79-1587; in blueschist and related rocks, 79-1165; role in partial melting of hydrous mafic compositions, 79-2372; Portugal, 79-831; Italy, 79-1833; Switzerland, 79-4376, 4378; Canada, 79-233

Spherical particles, structure of beds, 79-3072 Spilites, France, 79-1828; Oregon and Idaho, petrogenesis, 79-1855

Spindle stage, in optical crystallography, 79-37; calculation of refractive indices,

Spinel, 79-3710; local spin interactions, 79-3349 (70); in high-pressure regimes, 79-3233 (II.11); new high-pressure phase, X-ray, 79-2336; formation from hydrous magnesium aluminate, chem., X-ray, 79-328; growth of magnetic crystals by Bridgman technique, 79-1066 (5); isothermal compression under hydrothermal conditions, 79-264; optical and electrical behaviour at high pressure, 79-337; thermodynamic props., 79-259; olivine-spinel geothermometer re-evaluated, 79-2752; olivinespinel transition, crystal-field stabilization, 79-339; diposide-spinel equilibria and origin of melilitite and nephelinite, 79-2292; spinel-monticellite equilibria and bonding in magnesia refractories, 79-2370; coexisting with olivine and orthopyroxene, 79-2375; in system MgAl<sub>2</sub>O<sub>4</sub>-Al<sub>2</sub>O<sub>3</sub>, phys. props., 79-3061; in system CaO-MgO-Al<sub>2</sub>O<sub>3</sub>-Fe-O<sub>2</sub>-SiO<sub>2</sub>, 79-3662; stability of phlogopite with, 79-359; spinel-åkermanite instability, 79-2421; partitioning of Cr and Al with clinopyroxene, 79-353; lunar, mineral chem., 79-2698; comp. characteristics, 79-1486; equilibration of spinel-ilmenite assemblage, 79-1503; effects of thermal metamorphism on comp., 79-1554; Scotland, 79-4181; minerals in West Carpathian ultrabasic rocks, 79-4082; Russian SFSR, 79-901; Mid-Atlantic Ridge, Cr-bearing, 79-4077, 4078; Pakistan, in Iherzolite, comp., 79-728; New South Wales, 79-3233; Western Australia, 79-3101; magnesian, non-stoichiometric, 79-1625; New York, 79-3107; Mexico, inclusions in peridot, 79-1356

-, chromite, Czechoslovakia, from ultrabasic body, 79-4080; Lesotho, 79-3233 (II.7); Pacific Ocean, in basalts, 79-4245; British Columbia, 79-2836; Vermont, textural and

chem. variations, 79-1852 -, galaxite, *France*, 79-2770

—, jacobsite, France, 79-2770

Spinel (contd.)

-, ulvöspinel, electronic-structure model, 79-3395; magnetite-spinel solid solution, configurational entropy, 79-267; in U-bearing sandstones, 79-4071

structures, Mg<sub>2</sub>GeO<sub>4</sub>, structure refinement, 79-176; aluminium oxynitride -

structure model, 79-179

SRI LANKA, sillimanite cabochons, 79-2433; position in Gondwanaland, 79-991; gem gravels, 79-403

Stalagmites, "fried egg" -, colour differen-

tiation, 79-1813

Stamps, minerals, rocks, and fossils on, 79-4390

Standard rocks G-1 and W-1, 79-2638; USGS, anal., 79-3898-3902, 3904

Stannite, 79-189; stannite-chalcopyrite, stannite-sphalerite solid soln. and exsolution, 79-1060 (IV.5); černýite, cadmium analogue, 79-3405; Bolivia, coexisting, with kesterite, chem., X-ray, 79-3406

Starkeyite, alteration with seasons, 79-750

Staurolite, high-P experimental crystallization, contents, 79-3702; ZnO 79-2773; 79-3117; New Mexico, in Alabama, quartzite, 79-1857; Texas, 79-1812

Stellarite, mixture plancheite and quartz, 79-

2442

Stellerite v. zeolite

Stenhuggarite, crystal structure, 79-186

Stenols, in Black Sea waters, 79-3890 Steranes, biodegradation in crude oils, 79-2584

Sterenes in surface sediments, 79-2557

Sterols, western North Atlantic, geochem. of sediments, 79-2531; Texas, in Baffin Bay sediments, 79-2546

Stevensite, Japan, stevensite-like mineral, 79-691; Utah, oolites from Green R. for-

mation, anal., 79-123

Stibiotantalite, California, 79-1655

Stibnite, Corsica, 79-3475; Mexico, 79-3119

Stilbite v. zeolite

Stilpnomelane, crystal structure, chem., phys. props., 79-692; Switzerland, 79-1890; Poland, from granite pegmatites, 79-4036; Minnesota, Ontario, 79-934

Stone-cutting machine using diamond impregnated wire, 79-1046

Stones of destiny, book, 79-3243 Stromatolites, India, phosphate-bearing, 79-4265; chem. rhythmicity, 79-1440

Strontianite, Malawi, secondary occurrence in carbonatite complex, 79-1234

Strontium, AAS detn. in geol. material, 79-49; diffusion in basalt melt, 79-1294; diffusion in obsidian, 79-1284; partition coefficient between alkali feldspar and silicate liquid, 79-1285; Italy, origin and distribution in travertines, 79-2514; in carbonates, 79-1463

compounds, electronic valency charge density, 79-2090; SrO, atomic charge density,

- isotopes, indicators of sources of island arcs, 79-1408; evidence for crustal contamination of continental volcanics, 79-2476; in mantle-derived hydrous minerals, 79-1394; geochem. of alpine lherzolites, 79-456; ratios of acid igneous rocks, 79-1938; studies of basalts and andesites, 79-461; in andesites and plateau lavas, 79-2503; in interstitial waters from DSDP sites, 79-494; in pore fluids from deep-sea cores, 79-495; Norway, data from Archaean migmatites, 79-1442; Italy, correlation with O isotopes in rocks, 79-3808; India, in kimberlites, 79-3815; study of Ross Sea sediment, 79-481; Greenland, in Skaergaard intrusion, 79-1396; evolution in west Greenland-Labrador craton, 79-2528; Ohio, in brines from petroleum fields, 79-2579; West Indies, geochem. of granodiorites, 79-3836; Dominican Repb., geochem. of tonalite batholith, 79-469; Chile, petrogen. of ignimbrites, 79-3837

Structural-optical mineralogy, recent ad-

vances, 79-4330

Strüverite, 79-1628

Struvite-structure, crystal structure of MgKPO<sub>4</sub>.6H<sub>2</sub>O, 79-2142

Sub-aqueous mass transport, discussion and classification, 79-1784

SUDAN, Khartoum Province and N Gezira area, hydrogeology, 79-2577; Red Sea Hills, high-level igneous emplacements, 79-2926

Sugilite, Japan, new mineral, anal., opt., X-ray, 79-2892

Sulphates, adsorbed on hydrous alumina, 79-91; adsorption on iron oxides, 79-274; sedimentary cycle, O isotope geochem., 79-3843; Israel, from surface waters, S isotope distribution, 79-1464

Sulphides, K-bearing, age detn., sulphide-silicate liquid immiscibility, 79-2303; alkali element/transition metal —, syntheses, 79-3672; mineralogy and paragenesis of South Pennine orefield, 79-2172; Italy, S isotope investigation, 79-1401; Russian SFSR, isotopic comp. of sulphur, 79-2466; Australia, in ultramafic xenoliths from Newer basalts, 79-2980; differentiation in basal zone of Stillwater complex, 79-1733

deposits, Ireland, in Leinster granite, 79-1171; ore-mineral fabrics, 79-2158 (35); Spain and Portugal, 79-1174; India, geol. setting and origin, 79-3520; evolution of rhythmites into tectonites, 79-3521; New South Wales, mobility of metals in water near base-metal deposits, 79-1323

-, mineralization, geochem. Norway, approach, 79-431; India, paragenesis, 79-

, nodules, Shetlands, related to diagenesis of lacustrine sediments, 79-2161

, ores, grindability, 79-1980; Cyprus, hydrothermal convection and origin, 79-1176; South Africa, supergene alteration, 79-1154

Sulphosalts, nomenclature, 79-747

Sulphostannates, formation of, 79-1070 (IV.6) Sulphur, solubility in silicate melts, 79-3613; in synthetic tholeiitic melts, 79-3614; new high-pressure form, 79-314; melting curve and polymorphism, 79-2290; in glassy rims of pillow basalts, 79-1409; detn. in soils, 79-2021; species in Corsica spring water, 79-3389; *Spain*, in non-marine evaporite deposits, 79-3856; forms in *New Zealand* coals, 79-1998

components, electrochem. of reduced species in natural waters, 79-2309; SO<sub>2</sub>, interaction with ferromanganese nodules, 79-2168; Poland, in well-encrusting sediments, 79-4090

isotopes, distribution in marine sediments,

79-3848; Italy, in sulphides and basic rocks, 79-1401; Israel, in sulphates from surface waters, 79-1464; Japan, in granitoids, 79-2489; Greenland, in early Archaean sediments, 79-3851

-, native, Michigan, 79-3119

Sumatra v. Indonesia

Supersaturated solutions, structure of, 79-

Surite, Argentina, new mineral, anal. opt., X-ray, 79-2893

Sussexite, Japan, X-ray, opt., 79-734

Svanbergite, Syria, from iron ore deposit,

SWAZILAND, Archaean gneiss complex and granodiorite suite, 79-487; tonalitic and trondhjemitic rocks in crustal development, 79-3231 (9)

SWEDEN, mineral deposits, 79-3232 (3); Caledonides, 79-771 (10); geochem. anomalies in glacial drift and peat, 79-3892; Proterozoic dolerites, 79-3784; Lr. Ordovician pelagic-type limestones, 79-4217; rock sample orientation system, 79-3188; ages of apatites from iron ores, 79-3149; Angermanland, Revsund-Sörvik granites, 79-4177; Falun sulphide deposits, 79-2159; Göteborg, zircon morphology in polymetamorphic rocks, 79-4006; NW Gotland, Philip structures in submarine Silurian, 79-4250; Järnvägsforsen tunnel, petrol., 79-4134; Kittelfjäll, dunite, 79-3596; Laisvall Pb and Zn deposit, minerals and plant remains, 79-221; Lake Mien and Siljan structure, <sup>40</sup>Ar/<sup>39</sup>Ar ages of impact structures, 79-1941; Långban, one-locality minerals, 79-974; paulmooreite, 79-4120; tungstenian tetrawickmanite, 79-2842: magnussonite, 79-3417; Lappland, boulder terrains, 79-3449; Malmberget, granitic aplite, 79-3600; Nordmark, Brattfers mine, manganhumite, 79-1104; Norrbotten, heavy minerals from placer deposits, 79-3448; petrol. of Ragunda rapakivi massif, 79-4178; Siljan structure, astroblematic granite/sandstone contact, 79-4001; Skellefte dist., ages of intrusive rocks, 79-3148; Ulvö dolerite, Fe-Ti oxides in, 79-4331

Switzerite, Germany, 79-4373; Carolina, 79-982

SWITZERLAND, glaucophane-bearing mafic rocks, 79-4305; minerals from Rotondo granite, 79-4376; Friedlander- and Bambauer-quartz, 79-3093; chernovite, 79-4086; E, possible meteorite impact, 79-4002; Aar massif, new 5C pyrrhotite, 79-2888; Aar and St. Gotthard massifs, mineral occurrences, 79-4379; Ct. Aargau, Frick, sedimentary iron ore deposits, 79-3514; Alpe Arami, lherzolite rocks, 79-922; Alps and Jura Mts., baryte-celestine mixed crystals, 79-4100; metamorphism in Bergell granitic intrusions, 79-1832; Piz Cam, kutnahorite, 79-4104; Bergwerk, Herznach, mineral occurrences, 79-1891; Bodensee-Rhine junction, placer gold deposits, 79-3473; Campolungo, tremolite, 79-3094; Cima di Gagnone, petrol. of eclogite-metarodingite suite, 79-4306; Gorduno, aluminoferroan pargasite in eclogite, 79-4030; Greifensee, iron phosphate, in lake sediments, 79-2513; origin of Lago Tremorgio crater, 79-1582; La Péniche, Terra Sigillata SWITZERLAND (contd.)

pottery, 79-4391; Lengenbach, one-locality minerals, 79-974; Rhone glacier, sector structure of adularia, 79-1608; St. Gotthard massif, aeschynite-Y, 79-4378; Segnes, minerals in cleft areas, 79-3095; Sursee and Luzern, sandstones in area, 79-4142; Tavetsch, bazzite, 79-1892; minerals from, 79-1893, 1894; profession of strahler 79-1907: Cavradisch-(crystal-seeker), lucht, hematite, 79-1895; Tavetscher-Zwischenmassiv, mineral occurrences, 79-4377; Val Bregaglia, mafic-ultramafic complex, 79-4304; Val Scerscen, Bernina, manganese pyroxenoids and carbonates, 79-670; Canton Valais, mineral occurrences, 79-1890; Goppenstein, Pb-Zn mine, 79-3513; Verzasca and Bellinzona regions, plagioclase, 79-1615; Zermatt, deformation in Theodul-Rothorn zone, 79-4141

Syenite, Scotland, age detn., 79-3151; USSR, anal., 79-1209; comp. of gas inclusions, 79-2564; Japan, quartz porphyry, titanbiotite in, 79-2808; Western Australia, age, 79-1013; Greenland, fractionation and

assimilation, 79-818

-, nepheline --, agpaitic, temp., pressure, redox conditions, mineral equilibria, 79-1273; Greenland, crystallization history, 79-4173

Synchysite, lanthanides in, 79-4105; Switzerland, 79-4376

Syngenite, crystal structure, 79-2137; thermal dehydration, 79-2355, 4101

SYRIA, Radjou iron ore deposit, svanbergite from, 79-4108

Systems:

 $Ag-\Sigma S-H_2O$ , 79-1325

Ag<sub>2</sub>S-Sb<sub>2</sub>S<sub>3</sub>-Bi<sub>2</sub>S<sub>3</sub>, Ag<sub>2</sub>S-As<sub>2</sub>S<sub>3</sub>-Sb<sub>2</sub>S<sub>3</sub>, Ag<sub>2</sub>S<sub>3</sub>-As<sub>2</sub>S<sub>3</sub>/Bi<sub>2</sub>A<sub>3</sub>, 79-331 Al-Mg-Si-O-N, 79-1328

BeO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>-H<sub>2</sub>O, 79-1335 Bi-Sn-S-O, 79-330

Bi<sub>2</sub>S<sub>3</sub>-PbS-CuPbBiS<sub>3</sub>, Bi<sub>2</sub>S<sub>3</sub>-PbS-Cu<sub>2</sub>S, 79-3671

 $Ca^{2+}-Mg^{2+}-H_2O_3^{1-}-H_2O_79-2358$ CaCO<sub>3</sub>-Ca(OH)<sub>2</sub>-CaS, 79-2359

CaCO<sub>3</sub>-Fe<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>-aqueous NaCl, 79-

CaCO<sub>3</sub>-SiO<sub>2</sub>-H<sub>2</sub>O, 79-356 CaF<sub>2</sub>-MgCl<sub>2</sub>-H<sub>2</sub>O, 79-3682

CaO-MgO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>, 79-2384, 3233 (1.2), 3642, 3714, 3720, 4233

CaO-MgO-Al<sub>2</sub>O<sub>3</sub>-Fe-O<sub>2</sub>-SiO<sub>2</sub>, 79-3662

CaO-MgO-CeO<sub>2</sub>, 79-323 CaO-MgO-SiO<sub>2</sub>, 79-1854, 2371

CaO-MgO-SiO<sub>2</sub>-H<sub>2</sub>O, 79-4291 CaO-MgO-SiO<sub>2</sub>-H<sub>2</sub>O-CO<sub>2</sub>, 79-1307,

1310, 1837, 3675, 3737

CaO-MgO-ZrO<sub>2</sub>-SiO<sub>2</sub>, 79-3741, 3742 CaO-MnO-CO<sub>2</sub>, 79-898

CaMgSi<sub>2</sub>O<sub>6</sub>-CaAl<sub>2</sub>Si<sub>2</sub>O<sub>8</sub>-CaAl<sub>2</sub>SiO<sub>6</sub>,

CaMgSi<sub>2</sub>O<sub>6</sub>-CaAl<sub>2</sub>SiO<sub>6</sub>-Ca<sub>2</sub>Si<sub>2</sub>O<sub>6</sub>,

2CaO.MgO · 2SiO<sub>2</sub>-CaO.MgO · 2SiO<sub>2</sub>, 79-261, 2377, 2378

CaMgSi<sub>2</sub>O<sub>6</sub>-Na<sub>2</sub>Si<sub>2</sub>O<sub>5</sub>-H<sub>2</sub>O, 79-2381 CaSiO<sub>3</sub>-Al<sub>2</sub>O<sub>3</sub>, 79-3698

CaSiO<sub>3</sub>-MgSiO<sub>3</sub>-FeSiO<sub>3</sub>-CaAlTi<sub>2</sub>O<sub>6</sub>, 79-

 $Co-\Sigma S-\Sigma CO_2-H_2O$ , 79-1325  $Cr_2O_3-WO_3$ , 79-321

 $Cu-Fe-\Sigma S-CO_{2}-H_{2}O_{3}$ , 79-1325

Cu-Fe-Sn-S-Se, 79-1321

Eu<sub>2</sub>O<sub>3</sub>-HfO<sub>2</sub>, 79-3349 (32) Fe-As-H<sub>2</sub>O, 79-329

Fe-Co-S, 79-3670

Fe-Cr-Ti-O, 79-1528 Fe-H, 79-263

Fe--Mn-Al-Si-H, 79-348

Fe-Si-C-O-H, 79-489 Fe-W-O, 79-2340

FeO-Fe<sub>2</sub>O<sub>3</sub>-TiO<sub>2</sub>, 79-3579

 $Fe_2O_3-WO_3$ , 79-321, 2339 Fe<sub>2</sub>SiO<sub>4</sub>-KAlSi<sub>2</sub>O<sub>6</sub>-SiO<sub>2</sub>, 79-3624 Fe<sub>2</sub>SiO<sub>4</sub>-Mg<sub>2</sub>SiO<sub>4</sub>, 79-336 Hg-S, 79-2879

H<sub>2</sub>O-Mg<sub>2</sub>SiO<sub>6</sub>-CaMgSi<sub>2</sub>O<sub>6</sub>-SiO<sub>2</sub>, 79-4200 H<sub>2</sub>S-H<sub>2</sub>O, 79-2309

KAlSi<sub>2</sub>O<sub>6</sub>--CaMgSi<sub>2</sub>O<sub>6</sub>, 79-3715 KAlSi<sub>2</sub>O<sub>6</sub>-CaMgSi<sub>2</sub>O<sub>6</sub>-SiO<sub>2</sub>-H<sub>2</sub>O, 3658

KAISi<sub>3</sub>O<sub>8</sub>-NaAISi<sub>3</sub>O<sub>8</sub>-CaAISi<sub>2</sub>O<sub>8</sub>, 79-2399

 $K_2O - Al_2O_3 - SiO_2 - CO_2$ , 79-3638  $K_2O-Al_2O_3-SiO_2$ , 79-3629

 $K_2O-Al_2O_3-SiO_2-H_2O$ , 79-2014 2394

K<sub>2</sub>O-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>-H<sub>2</sub>O-HCl, 79-278

K<sub>2</sub>O-FeO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>, 79-2320, 3690 K<sub>2</sub>O-Ta<sub>2</sub>O<sub>5</sub>, 79-1134, 1135 (K<sub>2</sub>O; Na<sub>2</sub>O)-Al<sub>2</sub>O<sub>3</sub>-(FeO, MgO)-SiO<sub>2</sub>,

79-3623

La-Co-O, 79-325 La<sub>2</sub>O<sub>3</sub>-Al<sub>2</sub>O<sub>3</sub>, 79-2345

Li<sub>2</sub>O-BeO-SiO<sub>2</sub>, 79-345 Mg-Fe-Al-Si-O-H, 79-3710

MgAl<sub>2</sub>O<sub>4</sub>-Al<sub>2</sub>O<sub>3</sub>, 79-3061

MgO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>, 79-342, 2375, 3349 (53)

MgO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>-B<sub>2</sub>O<sub>3</sub>-H<sub>2</sub>O, 79-1336 MgO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>-Cr<sub>2</sub>O<sub>3</sub>, 79-3716

 $MgO-CaO-SiO_2-Fe_2O_3-Al_2O_3-Na_2O$ . P<sub>2</sub>O<sub>5</sub>, 79-335

MgO-Fe-O<sub>2</sub>, 79-2337 MgO-H<sub>2</sub>O-CO<sub>2</sub>, 79-3675

MgO-SiO<sub>2</sub>-H<sub>2</sub>O, 79-2397, 3688

MgO-SiO<sub>2</sub>-CO<sub>2</sub>-H<sub>2</sub>O, 79-3689 MgO-SiO<sub>2</sub>-H<sub>2</sub>O-HCl, 79-254, 3681

Mg<sub>2</sub>SiO<sub>4</sub>-Fe<sub>2</sub>SiO<sub>4</sub>-CaMgSi<sub>2</sub>O<sub>6</sub>-CaFeSi<sub>2</sub>O<sub>6</sub>-KAlSi<sub>3</sub>O<sub>8</sub>-SiO<sub>2</sub>, 79-3730 Mg<sub>2</sub>SiO<sub>4</sub>-iron oxide-CaAl<sub>2</sub>Si<sub>2</sub>O<sub>8</sub>-SiO<sub>2</sub>, 79-

3687  $Mn-\Sigma S-\Sigma CO_2-H_2O$ , 79-1325 Mn-Si-C-O, 79-4292

Mo-ΣS-H<sub>2</sub>O, 79-1325

Na-K-Ca-Ba, 79-2805

NaAlSiO<sub>4</sub>-SiO<sub>2</sub>-NaCl-H<sub>2</sub>O, 79-374 NaAlSi<sub>2</sub>O<sub>6</sub>-CaAl<sub>2</sub>Si<sub>2</sub>O<sub>8</sub>-CaMgSi<sub>2</sub>O<sub>6</sub>-SiO<sub>2</sub>, 79-3632

NaAlSi<sub>3</sub>O<sub>8</sub>-CaAl<sub>2</sub>Si<sub>2</sub>O<sub>8</sub>-KAlSi<sub>3</sub>O<sub>8</sub>-SiO<sub>2</sub>-H<sub>2</sub>O, 79-4290

NaAlSi<sub>3</sub>O<sub>8</sub>-KAlSi<sub>3</sub>O<sub>8</sub>-H<sub>2</sub>O, 79-2402

NaCl-H<sub>2</sub>O, 79-3679

 $NaFe^{3}+Si_{2}O_{6}-CaFe^{2}+Si_{2}O_{6}$ , 79-3783 NaFe<sup>3+</sup>Si<sub>2</sub>O<sub>6</sub>-CaMgSi<sub>2</sub>O<sub>6</sub>-CaAl<sub>2</sub>SiO<sub>6</sub>, 79-

NaMgF<sub>3</sub>---KMgF<sub>3</sub>, 79-1317 Na<sub>2</sub>O-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>, 79-3629

Na<sub>2</sub>O-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>-H<sub>2</sub>O, 79-2385 Na<sub>2</sub>O-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>-H<sub>2</sub>O-HCl, 79-254

Na<sub>2</sub>O-CaO-MgO-Al<sub>2</sub>O<sub>3</sub>-TiO<sub>2</sub>-SiO<sub>2</sub>, 79-4172

Na<sub>2</sub>O-FeO-MgO-CaO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>-H<sub>2</sub>O, 79-4324

 $Na_2O-K_2O-(Fe, Mg)O-Al_2O_3-SiO_2-H_2O,$ 79-2328 Na, SO<sub>4</sub>-Na, SeO<sub>4</sub>, 79-2356

Nb<sub>2</sub>O<sub>5</sub>-WO<sub>3</sub>, 79-1137 NH<sub>4</sub>F-H<sub>2</sub>O-SiO<sub>2</sub>-Fe<sub>2</sub>O<sub>3</sub>, 79-369  $Ni - \Sigma S - \Sigma CO_2 - H_2^2O$ , 79 - 1325

Pb- $\Sigma$ S- $\Sigma$ CO<sub>2</sub>- $H_2$ O, 79-1325  $Rb_2O-Nb_2O_5$ ,  $Rb_2O-Ta_2O_5$ , 79-1134,

1135  $Si_3N_4$ -AlN- $SiO_2$ -Al<sub>2</sub>O<sub>3</sub>, 79-311

SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub>, 79-1334 SiO<sub>2</sub>-B<sub>2</sub>O<sub>3</sub>, 79-2417 SiO<sub>2</sub>-FeO-K<sub>2</sub>O.Al<sub>2</sub>O<sub>3</sub>, 79-3622

SiO2-NaAlSi3O8-KAlSi3O8-CaAl2Si2O8-H<sub>2</sub>O, 79-3031

Sn-S, 79-1322 Ti-S, 79-1126

TiO<sub>2</sub>.H<sub>2</sub>O-Fe<sub>2</sub>O<sub>3</sub>.H<sub>2</sub>O, 79-2034

U-Th-Pb, 79-1506 Zn-Cd-S, 79-1320

 $Zn-\Sigma S-\Sigma CO_2-H_2O$ , 79-1325 An-Ab-Or-Q-H<sub>2</sub>O, 79-3743

An-Di, 79-3635

Di-Ab-An, 79-287, 2379, 3635

Ne-Ks-SiO<sub>2</sub>-H<sub>2</sub>O, 79-3640 Q-Ab-Or, 79-3581

Q-Ab-Or-An-H<sub>2</sub>O, 79-2321

Q-Or-Ab-An, 79-842 Lc<sub>60</sub>Di<sub>5</sub>Si<sub>35</sub> + CO<sub>2</sub> + H<sub>2</sub>O, 79-3657 diopside-akermanite-leucite, 79-351

diopside-anorthite-forsterite, 79-3718 diopside-åkermanite-nepheline-silica,

2327 fluorapatite-nepheline-diopside, 79-1272

nepheline-diopside, 79-373 picroilmenite-clinopyroxene-Cr2O3. 3726

quartz-water, 79-1296 quartz diorite-H<sub>2</sub>O-CO<sub>2</sub>, 79-3653

Szájbelyite, USSR, 79-735

Tacharanite, Germany, 79-3089; Italy, anal., opt., X-ray, 79-672

Tactite, Montana, min. and petrol., 79-4287 Taeniolite, crystal structure, 79-2112; Li-Ge-,

synthetic, hydration and dehydration, 79-3740 TAIWAN, gem gravels, 79-403; jade cabochons, 79-391; metamorphosed sandstone deposits, 79-4266; oceanic-ridge metamorphism of ophiolite, 79-2983; E,

zeolite-facies metamorphism of basaltic rocks, 79-4318; glaucophane schists, 79-931; Coastal Range, olistostromes, and included ophiolitic debris, 79-869; exotic amphibolite in Lichi formation, 79-4317; Funsing hypabyssal suite, min., petrol., 79-4199; Hualien, mineralogy of Fengtien nephrite deposits, 79-4029; Kuanshan igneous complex, RE and isotope geochem., 79-3823; conglomerates and mud-

stones in Lichimélange, 79-870; Likiliki, plagioclase in taiwanite, 79-4054; Mawutu, Kuanhsi, inclusions and megacrysts in alkali olivine basalt, 79-4198; ultrabasic

intrusions in Tatun volcanic group, 79-4197; Yingko-Taoyuan, diluvial sediments and clay minerals, 79-2067 Taiwanite, Taiwan, plagioclase in, 79-4054

Takovite, anion-exchange reactions, 79-2343 Talc, 79-4291; stability in system MgO-SiO<sub>2</sub>-H<sub>2</sub>O, 79-2397; lattice parameter

measurement, 79-3195; Greece, 79-1837; China, geol. conditions for formation, 79-4037; Brazil, 79-3120

- deposits, France, 79-1 Australia, 79-228, 229, 2228 79-1888; South

Talc—(contd.)

-, minnesotaite, Minnesota, Ontario, 79-934

Talmessite, Morocco, 79-3099

Talnakhite, 79-2460 Tantalite, 79-1370

-, ferrotantalite, 79-1628

---, manganotantalite, *Mozambique*, gem, opt., X-ray, 79-3766

Tantalum, *Bulgaria*, geochem. in lamproitic rocks, 79-454

TANZANIA, ruby, 79-1367; green tourmaline, 79-2436; melilitite-carbonatite tuffs, 79-2964; Galapo, magnetite morphology, 79-1623; Mautia Hill, purple and green yoderite, 79-1590; Merelani, blue-green zoisite, 79-1592; Oldoinyo Lengai, crystallization in cellular alkalic pyroxenite nodule, 79-837; Umba R., gem garnet suite, 79-393, 394

Tapiolite, overgrowths on cassiterite, 79-131; chem. and cell dimensions, 79-1628

Tarbuttite, South Australia, 79-3102

Tazheranite, *Russian SFSR*, 79-901; anal., X-ray, 79-730, 731

Tectonics and sedimentation, review, 79-1660 Tectonites, regional metamorphic-, quartz orientation patterns, 79-3027

Tektites, USSR, structural chem., 79-1580

Temperature controller, specification, 79-2330 Tennantite, far-infrared studies, 79-4095; British Columbia, 79-232

Tenorite, oriented transformation from malachite, 79-2363

Tephra, Washington, compositional variability, 79-1767

Tephroite v. olivine

Terpanes, biodegradation in crude oils, 79-2584

Testibiopalladite, Western Australia, chem., 79-4097

Tetrahedrite, far-infrared studies, 79-4095; *Italy*, coppite and frigidite shown to be tetrahedrite, 79-2877; *Czechoslovakia*, phys. props. and chem. comp., 79-4336; *USSR*, tetrahedrite-goldfieldite isomorphous series, 79-743; *British Columbia*, 79-232

Tetrapyrroles in *Dead Sea* asphalts, 79-2542 Tetrawickmanite, *Sweden*, tungstenian, 79-2842

Texasite, Colorado, anal., opt., 79-2863

Thadeuite, *Portugal*, new mineral, chem., opt., X-ray, 79-4124

THAILAND, gem gravels, 79-403; uraniferous materials, 79-1480; geochron. and geochem. of granite magmatism, 79-3167

Thallium, USSR, distribution in metamor-

phics and granitoids, 79-1450 Thaumasite, Germany, 79-3089

Thenardite structure-type, crystal chem. of

compounds, 79-2136

Thermal analysis, copper minerals, 79-680; aluminium oxide monohydrates, 79-84; sepiolite, 79-2037; water in palygorskite, 79-2049; potassium hydrogen phthalate standard, 79-1987

— conductivity, oxide ceramics, 79-952; oil shale minerals, 79-4354; nine solid phases of H<sub>2</sub>O, 79-2335; in saturated rocks at permafrost temps., 79-3074

- diffusivity of oil shale, 79-3075

expansion, characterization in minerals,
 79-1865; anhydrite,
 79-4337; alkali feldspars,
 79-4346; synthetic aluminosilicate-

sodalites, 79-4350; eudialyte, 79-4353; ZnO, 79-951

 neutron scattering, condensed matter under high pressure, 79-1271

- waters, international congress, 79-69

Thermodynamic properties, solid and liquid metals and ceramics, 79-249; minerals and related substances, 79-3557

Thermogravimetry, evaluation of Na<sub>2</sub>CO<sub>3</sub> and NaCl in clays, 79-85; of multicomponent zeolite-bearing rocks, 79-1040; of potassium hydrogen phthalate, 79-1987

Thermoluminescence, USGS standard basaltic rock, 79-953; of radioactive ores, 79-2598; carbonate rocks, 79-1870; calcite, 79-3063; dating Quaternary calcite, 79-1936; zircon, 79-947; quartz and feldspar, 79-60; natural and synthetic opals, 79-1369; baryte, 79-949; *Hawaii*, dating basalts, 79-3187

Thin sections, doubly polished, prepn., 79-40; plastic-spray cover, 79-41; estimating pore

and cement volumes, 79-42

Tholeiites, textural evidence for liquid immiscibility, 79-1693; mid-ocean ridge generation, 79-4233; Mid-Atlantic Ridge, origin, 79-297; Australia, quartz —, 79-845; California, tschermakite-bearing high-alumina olivine tholeiite, 79-1738; Gulf of California, recently formed island, 79-1781

dykes, Guyana, pyroxenes from, 79-668
 Tholeiitic magma, C isotope fractionation, 79-443; sulphur solubility characteristics, 79-3614

Thomsenolite, Greenland, 79-4371

Thomsonite v. zeolite

Thorite, crystal structure, 79-3354; Norway, 79-823

Thorium, extraction from sea-water, 79-3880; diffusion in diopside and fluorapatite, 79-277; partitioning in diopside-melt and whit-lockite-melt systems, 79-288; microdistributions in stony meteorites, 79-2736; concentrations on lunar surface, 79-578; Norway, in granites, 79-449; Italy, in pyroclastic rocks, 79-3809; in Siberian platform igneous rocks, anal., 79-1405; New Zealand, in soils, 79-2599; Canada, in Precambrian basement, 79-3873

— isotopes, <sup>228</sup>Th/<sup>228</sup>Ra radioactive disequilibrium, 79-2533

nuclides, in ferromanganese nodules, 79-424

Thulium, distribution between plagioclase and liquid, 79-3635

Thunderstorms, dynamical structure, 79-3236

Tienshanite, crystal-structure, chem., 79-2103 Tilasite, *Italy*, 79-4380; *New Jersey*, anal., 79-2839

Tillite, Norway, facies and sedimentation, 79-879

Tills, Norway, petrog., 79-878

Tin, mobilization from granitic magmas, 79-1070 (IV.9); Germany, metallogeny, 79-1070 (I.2); East Asia, Sn-W-Mo metallogenic provinces, 79-1070 (I.3); Japan, in granitic rocks, 79-1070 (III.7); in granitoids, 79-4285; provinces in eastern Australia, 79-1070 (I.5); Canada, in stratabound sulphide deposits, 79-1070 (VI.1)

deposits, related to granitoid formation, 79-1070 (II.3); classification and spatiotemporal distribution, 79-1070 (II.7); genesis of hydrothermal deposits, 79-1070

(IV.11); Portugal, mineralogical prospecting, 79-3469; Germany, related to granites, 79-1070 (II.6); Czechoslovakia, geothermometry, 79-1060 (IV.2); USSR, zoning of formation, 79-3518; Soviet Far East, relationship with granites, 79-1070 (V.3); Mongolia, associated with granitoid magmatism, 79-1070 (II.1); Queensland, mineralization, 79-1218

--- compounds, Sn<sub>2</sub>S<sub>3</sub> thermal vibrations, 79-3349 (25); silicates, prepn. and ion-exchange props., 79-2273

-, native, Greenland, 79-2849

Titanium, AAS detn. in silicate rocks, 79-1990; estimation in bauxite, 79-3211; partitioning between pyroxenes, garnets, oxides, 79-354; content and partitioning in rocks, 79-1163; Scotland, in podzols, 79-2055

 deposits, metamorphic source rocks of placer deposits, 79-1164; in anorthosite massifs, 79-1166; in alkaline igneous rocks,

79-1167

— minerals and compounds, World resources, 79-1168; amorphous and crystalline phases in soil clays, 79-2034; 16 *H* and 18 *H* polytypes of TiS<sub>1.7</sub>, 79-1126; pseudobinary TiO–ZrO<sub>2</sub>, 79-1312; TiO<sub>x</sub>, structure of superposition, 79-182; Ti<sub>2</sub>O<sub>3</sub>, high-temp. crystal chem., 79-180; ordered TiO, vacancy-strain coupling, 79-181; TiSi<sub>2</sub>, crystal structure, 79-183

Titanoludwigite, Russian SFSR, 79-730

Titanomagnetite, identification by TEM, 79-4333; alteration in submarine pillow lavas, 79-3661

Tobermorite, Germany, 79-3089

Todorokite, in manganese nodules, 79-1630; Austria, 79-3097; Russian SFSR, 79-901

TOGO, *Hahatoé-Kpogamé* phosphate deposit, 79-3534

Tonalites, Sr isotope geochem., 79-3231 (4); Finland, geochem., 79-451; Swaziland and South Africa, role in crustal development, 79-3231 (9); Dominican Repb., Sr geochem. of batholith, 79-469

Tonsteins, structural, textural, chem. features, 79-2058

Topaz, anomalous optical properties, 79-2099; Austria, 79-964; Poland, 79-1175; chem., opt., 79-453; Pakistan, 79-2771; Colorado, 79-3504; Utah, 79-3118; Brazil, 79-3120; sherry-brown, gem quality, 79-3764

Topazites, New South Wales, evidence for

magmatic origin, 79-2940

Tourmaline, infra-red spectra, 79-3058; absorption spectra, 79-3380; electronic absorption spectra, role of Fe, 79-3059; alkali-free, synthesis and characterization, 79-3711; Norway, 79-823; Switzerland, 79-3095; East Africa, nomenclature, 79-2436; Zambia, in borosilicate rock, 79-2780; Afghanistan, 79-2438; comp. and colour, 79-660; NW Territories, 79-2782; California, 79-2437

—, dravite, Japan, chem., opt., X-ray, 79-4013; Pennsylvania, Maryland, chromian variety, anal., opt., 79-659; Brazil, 79-

3120

---, elbaite, biaxiality, 79-938; *Brazil*, gem quality, 79-3122

—, liddicoatite, *Madagascar*, new gem variety, anal., 79-395

Trace elements, anal. of geol. materials, book, 79-3245; mass spectrometric detn. on geostandards, 79-2637; NAA detn. in geo-standards, 79-2631; sample-size errors in NAA detn., 79-2000; data for NIMROC reference samples, 79-2624; in standard ultrabasic rocks, 79-2623; in standard K-feldspar, 79-2622; effect on crystal defects, 79-1098; use in igneous processes, 79-2502; in solving petrogenic problems, 79-3777; detn. using ion exchange chromatography, 79-1999; distribution in alkaline intrusive rocks, 79-439; in diorite and granite standard samples, 79-2626; partition coefficients in andesite genesis models, 79-1277; geochem of Archaean greenstone belts, 79-1377; distribution between garnet and host volcanic liquids, 79-1280; crystal/liquid trace element partitioning, 79-1279; limits of solution in minerals, 79-1288; behaviour during anatexis in presence of fluid phase, 79-1292; in mantle-derived hydrous minerals, 79-1394; EPR anal. in marine environments, 79-1247; France, in granites, 79-1399; in San Francisco Bay sediments, 79-3551; Illinois, potentially volatile, in coal, 79-1439; North Carolina, in estuary sediments, 79-1429; *Tasmania*, distribution in galena, 79-3793

metals, atmospheric global cycles and man's impact, 79-3545

Trachybasalts, Sicily, 79-1709

Trachytes, Italy, biotites from, 79-685; Hawaii, aenigmatite-richterite-olivine --,

Trachytic lavas, Victoria, min. investigation, 79-1721

Tranquillityite, in lunar basalts, structural studies, 79-1513

Transition elements, colouring gemstones, 79-1366; bonding in humic acid, 79-2561; partitioning in crystalline and molten silicates, 79-1289

Traps, India, petrochem., 79-1403

Travertine deposits, Italy, isotopic comp., 79-475; origin and distribution of Sr, 79-2514

Tridymite, low —, crystal structure, 79-1118; structure refinement, 79-168; monoclinic, thermal changes, X-ray, 79-2414; orthorhombic superstructure, 79-3391; thermal change in unit-cell dimensions, 79-3392

Trimethylsilyl derivatives of silicate minerals and glasses, 79-3584; derivative of hal-

loysite, synthesis, 79-3261

Triphylite, synthetic, crystal structure, 79-2143

Triploidite, Cornwall,. end-member, chem., opt., 79-2869

Tritolyl phosphate, immersion oil for fluidinclusion studies, 79-1979

Troilite, Russian SFSR, 79-901; Greenland, 79-2849, 4070

Trondhjemites, definition, origin, 79-3231 (1); trace elements in, 79-3231 (3); Sr isotope geochem., 79-3231 (4); Norway, geochem., 79-3231 (17); Finland, geochem., 79-451; Scotland, ilmenite-magnetite geothermometry, 79-2835; Swaziland and South Africa, role in crustal development, 79-3231 (9); Pacific Ocean, low-K, 79-3231 (22); Newfoundland, contrasting associations, 79-3231 (15); origin, 79-3231 (16); Oregon, Wyoming, Archaean, 79-3231 (12)

Truscottite, 79-356

Tsumoite, Japan, new mineral, chem., X-ray, 79-2894; *USSR*, 79-4099

Tuff, Portugal, megacryst tuff and green tuff, 79-4220; Newfoundland, chem. and magmatic affinities, 79-2945; Quebec, petrog. and eruption mechanism, 79-1766; USA, Eocene, ages of biotites from, 79-3182; Wyoming, 79-4228

Tuffogenic rocks, Poland, petrog., 79-1091 Tugtupite, IR spectra, 79-1119

Tuhualite, crystal structure, 79-2120

Tungsten, anal. in rocks and minerals, 79-53; spectrophotometric detn. in rocks, 79-3205; spectrochem. detn. of traces, 79-1053; specific heat detn., 79-252; abundances in volcanic rocks, 79-2473; geochem., physiochem. conditions of migration and deposition, 79-1060 (IV.3); in nickeliferous lateritic profiles, 79-1383; partition between metal and silicate and origin of Moon, 79-539; distribution in Sea of Okhotsk, 79-1423

deposits, principal types, 79-3439; related to granitoid formation, 79-1070 (II.3); Portugal, mineralogical prospecting, 79-3469; fluid inclusions in quartz, 79-2181; Sardinia, tectonic relationship, 79-3516; border, Bulgaria-Yugoslavia W-Mo deposits, 79-1070 (I.4); Mongolia, associated with granitoid magmatism, 79-1070 (II.1); New Brunswick, porphyry zones, 79-1222

mineralization, USSR, 79-1209

TUNISIA, Neogene magmatism, 79-69 (10); Bled Zelfane, bacterial stabilization of

Pb-Zn deposits, 79-1205

TURKEY, mercury deposits, 79-3479; augite replaced by omphacite in blueschist rock, 79-1598; evolution of fracture zone, 79-3136; NW, sodic pyroxenes from metabasites, 79-2793; Anatolia, alkaline rocks and hybrid magmas, 79-69 (16); North Anatolian transform fault, age, offset, tectonics, 79-3138; Dravidji, anisotropic pyrite, 79-737; Emet colemanite deposit, veatchite-A, 79-4125; Kop Krom mine, kämmererite, 79-2811; Mihaliççik, Neogene tuffaceous clays, 79-2038; omphacite, 79-4024; Murgul, mineral locality, 79-3098; Mutki area, pyroxenes from ophiolitic rocks, 79-1597

Turquoise, variable-temp. electron spin reso-79-4339; synthetic, examination, 79-1362; Alabama, 79-3117; Virginia, 79-4385

Tuscanite, 79-4058

Tveitite, Texas, chem., opt., 79-2872

Tyrolite, France, 79-1887

Tyrrhenian Sea v. Mediterranean

Tysonite, crystal structure, 79-177 Tyuyamunite, Utah, 79-3501

Ultrabasic breccias in layered intrusions, 79-827, 828

intrusions, Taiwan, in Tatun volcanic group, 79-4197

rocks, Poland, Pt and Pd in, 79-2471; USSR, magnetites from, 79-722

Ultramafic complexes, Taiwan, geol. and petrol., 79-871; Montana, chromitite-bearing, petrochem., 79-2158 (34)

petrol., geochem., origin, 79-3231 (19); — nodules, origin in ingeous rocks, 79-2288; Lesotho, from kimberlite pipe, 79-669; South Africa, 79-2928

rocks, origin and melting, 79-2287; metamorphosed, model for fluids in, 79-1462; Norway, structural, stratigraphic, and petrol. study, 79-784; West Carpathians, boron distribution, 79-3810; alpine-type, geochem., 79-3813; Egypt, in Precambrian, 79-1712; Western Australia, sulphide-bearing, textures in, 79-2158 (33); Ontario, extrusive and intrusive discrimination, 79-2604; Vermont, olivine and chrome spinel variations, 79-1852

xenoliths, Canada, from kimberlite, 79-850 Ultrasonics, use in detn. of grindability of materials, 79-1980

Ulvöspinel v. spinel

UNION OF SOVIET SOCIALIST REPUB-LICS, first find of holtite, 79-662; tsumoite, 79-4099; chernovite, 79-4086; K-feldspars from rare-metal pegmatites, 79-696; carbonatites, 79-1374; glaucophane metamorphism and ophiolites, 79-2979; thermogravimetry of multicomponent zeolite-bearing rocks, 79-1040; methane formation and migration, 79-1475; Burakov complex, pyroxenes, 79-148; Central Asian combustible shales, Re behaviour, 79-1427; Chukotka, boron in Triassic sedimentary rocks, 79-2520; Dal'negorsk, calcite morphology, 79-752; Dzhail'minskaya syncline, brandtite, 79-2837; Kochbulag, palladous gold, 79-4065; Pai-Khoi, wavellite, 79-4109; Sarbay skarn deposit, pyrite metacrysts, 79-2847; Tetyukhe skarn deposit, hedenbergite, 79-147; White Sea, innercontent rocks of pegmatite, 79-2930

, ARMENIAN SSR, rare-metal mineralization in magmatic processes, 79-

1070 (V.1)

, AZERBAIDZHAN SSR, Dashkesan Co deposit, modderite, 79-746

-, BELORUSSIAN SSR, north boundary of crystalline rock block, 79-3130; subsurface karst in oilfield sedimentary strata, 79-256; ilmenite-magnetite ore, 79-2465

-, BURYAT ASSR, magmatogenic chloride solutions and tungsten mineralization, 79-1209; Solongo deposit, transformation of fedorovskite in borate ores, 79-735

, DAGESTAN ASSR, chem. and isotopic comp. of gas and water, 79-2593; structure and genesis of pyrite-polymetal deposit, 79-2211

GEORGIA, Sukhumi, weathered crust of Neogene conglomerate, 79-2069; Trialeti range, clinoptilolite-bearing tuff, 79-2828

, KAZAKHSTAN, magmatic ore systems, 79-2194; rare-metal-bearing granites, 79-107 (II.4); rare-metal mineralization in 79-1070 (V.1); magmatic processes, 79-4112; bilibinskite, new mineral, Karagaily deposit, arsenic hauchecornite, 79-742; Zhamanshin crater, 79-1580; outgassing of irghisites, 79-1749; Zhana-Tyuba deposit, petzite, 79-3411

-, RUSSIAN SFSR, Aldan Shield, feldspars in granulite- and amphibolite-facies rocks, 79-2825; Aldan-Stanovoi Shield, petrol. of anorthositation zones, 79-924; Anabar, Bargydainalakh pipe, olivine melilitite and kimberlite breccia, 79-303; Baikal region, Middle Proterozoic volcanUNION OF SOVIET SOCIALIST REPUB-LICS, RUSSIAN SFSR (contd.)

ism, 79-2962; K, Rb, Tl in metamorphics and granitoids, 79-1450; Baikal rift zone, data on thrusts, 79-2908; Lake Baikal, organic matter in sediments, 79-2562; Ti and Zr minerals in skarns, 79-730; Sludyanska region, barium phlogopites, 79-683; Bratsk, Angara extrusion, gabbro diabase, 79-835; Caucasus, radioactivity of igneous rocks, 79-2485; sulphides of Callovian stage, 79-2466; ore-forming cycles in Tyrnyauz deposit, 79-2210; greater Caucasus, structure of diabase belt, 79-2931; Cisbaikalia, mineralogy, 79-902; Gumbei scheelite deposit, isotopic comp. of carbonates, 79-3791; Geochem. Inst., Irkutsk, anal. of rock reference samples, 79-2632; Kalar pluton, gas inclusions in anorthosite, charnockite, syenite, 79-2564; Kamchatka, basalt from Early Quaternary volcanoes, 79-2963; palaeovolcanic rocks, 79-2936; igenous rocks, geochem., 79-1406; Ganalsky Range, metamorphic complexes, 79-3042; North Ladoga region, regional metamorphism and sediment comp. evolution, 79-1449; Karelia, schoenfliesite-wickmanite Pitkäranta, series, 79-4088; Khibiny apatite deposits, 79-1272; weathering of alkalic pluton, 79-2070; *Khibinsky massif*, mineralogy, 79-1061; Khingan tin-ore deposit, zoning, 79-3518; Kola Peninsula, new carbonatite finds, 79-2929; titanium deposits, 79-1167; source of Pb-Zn veins, 79-3484; komatiites from volcanic complexes, 79-1699; Kovdor massif, magnetites in, 79-723; tetraferriphlogopite, 79-1113; Lena-Anabar interfluve, native gold, 79-2152; Lovozero and Khibina massifs, parakeldyshite, new mineral, 79-2886; Maymecha-Kotuy ultramafic province, phosphate breccia, 79-2226; Maimecha-Kotuisk and Karelia regions, magnetites from ultrabasic, alkaline, and carbonatite massifs, 79-722; Monchegorsk Cu-Ni deposit, zoning, 79-3519; Norilsk Ni sulphide deposit, 79-3445; Plamennoye Sb-Hg deposit, dispersed carbonaceous material in, 79-2467; Primorye, ore minerals in polymetallic deposit, 79-3517; Sea of Okhotsk, tungsten distribution, 79-1423; Siberia, genesis of kimberlite pipes, 79-2932; pre-Cainozoic tectonic evolution, 79-990; U and Th in igneous rocks, 79-1405; levyne, 79-4063; Western Siberian Plain, celadonite and glauconite, 79-2816; Sikhote Alin Mts., Late Mesozoic granitoid series, 79-2935; ore-bearing associations, 79-1070 (I.1); volcanointrusive series, 79-1070 (II.2); Slyudyanka region, lavrovite, 79-4021; Soviet Far East, tin deposits related to granites, 79-1070 (V.3); bilibinskite, new mineral, 79-4112; Sutemskii region, aleksite, new mineral, 79-4111; Taygonos Peninsula, two stages of regional metamorphism, 79-3041; Tazheran alkaline intrusion, contact metamorphism and metasomatism, 79-901; Transbaikalia, rare-metal granites, 79-1070 (III.9); limburgite with ultramafic inclusions, 79-2933; Transural region, petrogen. of granitic intrusions, 79-4193; Urals, vertical zoning of gold-ore deposit, 79-3483; Pt-Fe alloys, 79-2831; colour of

emeralds, 79-385; Kempirsaya, huntite from weathered serpentinites, 79-755; Uzel'ginskoye deposit, coloradoite in pyritiferous ore, 79-2857; Voronezh massif, plagioclase of Ni-bearing basic-ultrabasic intrusions, 79-700; Yakutia, zircons from mantle, 79-4149; orthopyroxene in kimberlite, 79-2786; perovskite and ilmenite from kimberlites, 79-721; Obnazhennaya kimberlite pipe, pyrope from, 79-941; Yenisei Ridge, pyrite mineralization, 79-2193 -, TADZHIKISTAN, Dara-Pioz, bara-

tovite, 79-3362; Tadzhik Depression, Rb and Cs in Mesozoic sediments, 79-1426; Tien Shan region, contemporary tectonics, 79-1920; Nura Ridge, native gold, 79-224

-, TUVA ASSR, Khovuaksinsk Ni-Co deposit, rammelsbergite, safflorite, löllingite, 79-748

-. UKRAINE. Precambrian granitoid associations, 79-2906; pyrope from clastic rocks and sediment, 79-2762; Azov Sea, distribution of U, Io, Ra, Th, 79-1465; Carpathians, trace elements in acid volcanic rocks, 79-3811; N Donbas, tectonics and metallogeny, 79-2195; Ukrainian Shield, explosion meteoritic craters, 79-650; graphite formation conditions, 79-

-, UZBEK SSR, Kuraminsk Ridge, tetrahedrite-goldfieldite ores, 79-743

UNITED ARAB EMIRATES, Abu Dhabi, algal mats, biogeochem. study, 79-1441

KINGDOM, mineral deposits, 79-3232 (6); lithium abundances, 79-1376

UNITED AMERICA, STATES OF mineralogy in age of Jefferson, 79-72; official state rocks and minerals, 79-1910; Mn-Fe coatings on saprolite fracture surfaces, 79-121; quartz, chert, feldspars in muds and sands, 79-896; geothermal fields, 79-71 (11); K-feldspars from pegmatites, 79-4045; kimberlites, review, 79-854; inclusions in agates, 79-402; lacustrine pisoliths, 79-3011; Zn, Mn, Cu in soil fractions, 79-3325; stereochem. of Green R. crude oil, 79-2546; speleotherms at cave sites, 79-2456; SW, O isotope ratios of quartz, 79-419; Creta stratiform Cu deposit, 79-219; W, upper mantle P velocity structure, 79-1872; NW, evolution from oceanic crust, continental 79-1932; Appalachians, synthesis, 79-771 (19, 20); middle Atlantic states, two clay-mineral facies of Potomac group, 79-1092; Chesapeake Bay, pollution history, 79-2243; Great Plains region, mined-layer clay in Pierre Shale, 79-3302; Lake Michigan, arsenic in unconsolidated sediments, 79-241; phosphorus in unconsolidated sediments, 79-241; phosphorus in unconsolidated sediments, 79-242; major, minor, trace constituents in, 79-240; Little Traverse Bay, geochem. of sediments, 79-3844; Lake Superior, dissolved SiO2 in, 79-2256; New England, geol., 79-805; Rattlesnake pluton, petrog., chem., age, 79-805 [3]; ages of White Mt. intrusives 79-1965; Rocky Mts., and Klamath Mts., low-K siliceous rocks, 79-3231 (13); E, potential Cu-Mo deposits, 79-3496; SE, As concentrations in rivers, 79-2244; W, Mn deposited by hot springs in chert-greenstone complexes, 79-2204

, ALABAMA, mineral occurrences, 79-

ALASKA, Pt-Fe alloys, 79-2831; S, Mesozoic plutonic belts, 79-4204; SE, megalineament marking edge of Coast Range batholith, 79-1675; Copper R. basin, gases of mud volcanoes, 79-2597; Fairbanks area. As in streams, sediments, ground water, 79-2606; Juneau area, Bridget Cove volcanics, 79-851; McGrath and Russian Mission quadrangles, ferroaxinite, 79-1596; St. Augustina volcano, nuée ardente, 79-1765; St. Georges I., K/Ar ages of basement rocks, 79-1019; Serpentine Hot Springs area, igneous and metamorphic rocks, 79-4155

-, ARIZONA, guidebook to geology, 79-70;

ages of Cretaceous and Tertiary volcanic and intrusive rocks, 79-1028; petrogen. of xenolith-bearing basalts, 79-4230; Late Precambrian Sixtymile formation, 79-4165; Barringer meteorite crater, 79-70 (12); Buell Park, titanian chondrodite and titanian clinohumite, 79-1106; Chino Valley, eclogite, pyroxenite, amphibolite inclusions in latite, 79-3233 (IV.1); Copper Queen mine, paramelaconite, 79-1131; Helvetia dist., chalcanthite, 79-3114; Jerome, United Verde mine, guildite, 79-202; Maricopa and Pinal Counties, earth fissures and land subsidence, 79-70 (9); Mogollon Rim, Palaeozoic biostratigraphy and palaeontology, 79-70 (11); Palo Verde nuclear generating station, geol. of area, 79-70 (10); Petrified Forest National Park. geochem. of silicified wood, 79-2550; Pike's Peak Precambrian iron-formation, 79-70 (4); Pinacate volcanic field, geol., 79-70 (2); Sacaton porphyry copper deposit, 79-70 (5); Salt R. Valley, terraces related to late Cainozoic history, 79-70 (1); San Carlos, Peridot Mesa vent and alkaline rock association, 79-70 (13); San Francisco volcanic field, olivine zoning, 79-1585; Santa Rita Mts., plutonic rocks, 79-4214; Squaw Peak

79-865; White Picacho dist., Li peg-matites, 79-70 (3) , ARKANSAS, history of zinc mining, 79-4387; NW, geochem. of Carboniferous limestone units, 79-2535; Magnet Cove, titanium deposits, 79-1167; pectolite, 79-3371; North Little Rock, minerals from Jeffrey quarry, 79-3115; Polk Co., kidwellite, 79-3119

area, Precambrian metavolcanic rocks,

79-70 (8); Superstition cauldron complex,

79-70 (6); Tombstone, khinite, parakhinite,

dugganite, new tellurate minerals, 79-1651;

Tuscon, Santa Rita Mts., plutonic rocks,

79-2950; White Mts., Late Cainozoic geol.,

, CALIFORNIA, monzonitic plutons, 79-2949; reconstruction of crustal blocks, 79-3834; glaucophane metamorphism and ophiolites, 79-2979; plutonic rocks from Salinian block, 79-1029; U/Pb studies, 79-33; E, Late Jurassic Independence dyke swarm, 79-4212; N, Palaeozoic ophiolitic complexes, 79-32; southern coastal area, trace metals in marine waste water discharge, 79-2241; Agoura, clinoptilolite, 79-172; Barrett Reservoir, metal fluxes in semi-arid lake, 79-2538; geochem. of Brokeoff volcano, 79-3835; southern Cascades, tschermakite-bearing high UNITED STATES OF AMERICA CALIFORNIA (contd.)

alumina olivine tholeiite, 79-1738; Coast Ranges, clay mineralogy and slope stability, Peak, K-bearing Coyote sulphides, 79-1; bartonite, new mineral, 79-763; Death Valley, hydroboracite, 79-3112; hungchaoite, 79-4110; Diablo Range, chessboard-twinned albite, Feather R. area, ferroaxinites, 79-1596; Geysers-Clear Lake region, age relations above and below Upper Jurassic ophiolite, 79-4246; Gulf of California, geol. petrol., geochem. of Isla Tortuga, 79-1781; Lassen Park, He isotopes in volcanic gases, 79-2570; Little Lake area, Pleistocene history of volcanism, 79-1769; Mariposa Co., gold from Colorado quartz mine, 79-3118; Medicine Lake Highland lavas, negative inclination anomalies, 79-4413; Mojave Desert, Mn- and Fe-oxide mineralogy of desert varnish, 79-3842; Mt. Diablo mines, phases in metacinnabar specimen, 79-2879; Pala, salmonsite, 79-770; Plumas Co., low tridymite, 79-1118; San Andreas fault system, 79-1916; 3135; San Benito Co., cerian vesuvianite, 79-4011; desautelsite, 79-4115; San Diego Co., Chesterton soil concretions, 79-4275; gem-bearing granitic pegmatite-aplite dykes, 79-2501; Mesa Grande, rynersonite, new mineral, 79-1655; Pala Valley, tourmalines, 79-2439; San Francisco Bay sediments, leachable trace elements in, 79-3551; geochem. of soluble Cu, Fe, Ni, Zn, 79-3553; San Pedro and Santa Monica, dating marine deposits, 79-1967; Shastina and Black Butte, Holocene pyroclastic-flow deposits, 79-1768; Sierra Nevada, Kings River ophiolite, 79-1780; fusion of granodiorite by basalt, 79-1822; petrol. of Rocklin pluton and associated rocks, 79-1737; Smartville, ophiolite complex, 79-2977; Trinity Co., Hale Creek mine, inesite, 79-1107; Upper Newport Bay, heavy metal pollution of sediments, 79-1265; West Shasta dist., geochem., of island-arc rocks, 79-3231 (18); White-Inyo Range, monzonites, 79-2948

-, COLORADO, kimberlite pipe, 79-855; minor-element and Sr-isotope geochem. of Tertiary stocks, 79-2457; N, IR detection of kimberlite diatremes, 79-4211; megacryst assemblages in kimberlite, 79-3233 (III.1); Brekenridge mining dist., multiple intrusion and hydrothermal activity, 79-1392; Colorado plateau, stratiform uranium deposits, 79-1060 (D.4); potassic volcanism, 79-3185; Creede, ktenasite, 79-3091; Eagle Co., Gilman dist., ore deposits, 79-3503; Front Range, rutile in sillimanitequartz gneiss, 79-1856, 3504; Golden, rock strength, 79-598; Green Knobs and Buell Park kimberlite diatremes, minerals in peridotite inclusions, 79-3233 (IV.4); Larimer Co., diamond in kimberlite diatremes, 79-3541; Luster pegmatite, texasite, 79-2863; Moab quadrangle, U and V resources, 79-3502; Moses Rock, garnet clinopyroxenite-chlorite eclogite transition, 79-3233 (IV.5); Needle Mts. district, geol. and mineral deposits, 79-3505; North Pole basin, ilvaite, 79-3113; Piceance Creek basin, mineralogy of lacustrine lithofacies, 79-1810; Rosalie Peak, granite phase of

Mt. Evans pluton, 79-1740; Santa Fe Mt., wagnerite occurrence, 79-4384; Steamboat Springs, Park Range, intrusive rocks, 79-4213; Uinta Basin, ages of biotites from tuffs, 79-3182; Branchville, triploidite, 79-2869

-CONNECTICUT, Litchfield, heterosite-purpurite locality, 79-975; Rattlesnale Hill, tholeitic basalts, 79-4208

-, FLORIDA, humic and fulvic acids in estuary sediments, 79-2543; radiocarbon in annual coral rings, 79-2571; Bone Valley, weathering of phosphate pebbles, 79-438; Savannah R. estuary, pollution history, 79-3552

-, GEORGIA, minerals, properties and occurrences, 79-2010; kaolin, 79-2052; volcanic evolution of southern slate belt, 79-873; "fried egg" stalagmites, 79-1813; NE, stream quartz grain surface features,

79-3016

-, HAWAII, Ge-Si and Ga-Al fractionation in volcanic rocks, 79-1410; submarine pillow basalts, 79-1409; luminescence dating of basalts, 79-3187; volatiles in tholeiitic submarine basalts, 79-2984; clays and clay minerals of hydrothermal origin, 79-2014 (4,3); Algae lava lake, cooling and vesiculation, 79-4225; crystallization and differentiation, 79-4226; Kalalua eruption 1977, mercury emission, 79-1256; Kilauea, amphiboles in olivine tholeiite, 79-2389; hydrothermal alteration of basalts, 79-1763; olivine-spinel geothermometry, 79-2752; melting and crystallization of basalts, 79-2294, 2295; Kilauea, Makaopui, and Alae lava lakes, plagioclase nucleation and growth, 79-1764; crystallization of Kilauea Iki lava lake, 79-4194; seismic props, of shallow magma reservoir, 79-2966; Mauna Loa Observatory, disturbances in CO, record, 79-2965; Oahu, barian-titanian biotites in nephelinites, 79-4035; Puu Koae, aenigmatite-richteriteolivine trachyte, 79-1731; Salt Lake crater, spinel lherzolites, 79-1779

, IDAHO, regional metamorphism and ages in Belt Series, 79-30; W, petrogen. of spilite and keratophyre, 79-1855; NE batholith, Rb/Sr and U/Pb isotopic studies, 79-1027; Big Creek dist., polhemusite, new Hg-Zn sulphide, 79-2887; Coeur d'Alene River, heavy metal sediment pollution, 79-2248; Columbia R., basalt, natural and artificial weathering, 79-1088; Craters of the Moon, Pb variation in volcanic rocks, 79-2500; Snake R. plain, basaltic lavas, 79-467; melting behaviour, 79-298; Wood R. mining

district, Pb-Ag deposits, 79-1197

, ILLINOIS, monitoring landfill leachate, 79-1263; volatile trace elements in coal, 79-1439; Silurian reef locations, 79-506; Crystal mine, fluid inclusions in fluorites, 79-420; Du Quoin, Johnstone City, and Little Grassy Lakes, major, minor, trace elements in bottom sediments, 79-243; Galesburg, Purington Shale, geochem. std., 79-1371; Normal, Funk Gem and Mineral Museum, 79-1916

-, INDIANA, Carroll Co., high-purity limestone and dolomite, 79-3450

, KENTUCKY, S, silicification history of former evaporite nodules, 79-4276; Flint Ridge-Mammoth Cave system, geochem. of speleotherms and cove waters, 79-422; Lexington, Headley Museum, 79-407

-, LOUISIANA, Choctaw Salt Dome, hil-

gardite, 79-3418

, MAINE, chronology, deformation, plutonism, polymetamorphism in Merrimack synclinorium, 79-805 (8); stratigraphic relationships, 79-805 (10); metal binding capacity of surface waters, 79-2249; NW, muscovite in metapelites, 79-1602; muscovite and K-feldspar from two-mica adamellite, 79-1604; Aroostook Co., prehnitepumpellyite facies metamorphism, 79-805 (9); Augusta, alteration of mica and feldspar in granitic rocks, 79-2499; Gulf of Maine, Upper Ordovician peralkalic 79-2946; polycyclic aromatic hydrocarbons in sediments, 79-2547; Knox Co., nickeliferous pyrrhotite deposits, 79-805 (13); Newry, Dunton Gem mine, uralolite, 79-2870

-, MARYLAND, Baltimore Canyon trough area, heavy-mineral variability, 79-1808; Chesapeake Bay, impact of anoxia on Mn fluxes, 79-2550; Lows Mine, Line Pit, chromian dravite, 79-659

-, MASSACHUSETTS, Nashoba mation, petrog. and geochem., 79-805 (2); E, age of Dedham granodiorite, 79-1964; W, history of Taconic unconformity, 79-3054; SW, zoned plagioclase and peristerite formation in phyllites, 79-1613; Ayer, Harvard, Clinton, Ayer crystalline complex, 79-805 (4); Blue Hills area, volcanic flows, stratigraphy and petrog., 79-805 (5); Boston basin, geol., 79-805 (1); Cape Cod, pyrite formation in salt marsh, 79-2242; Chester Emery mines, history mineralogy, 79-3108; East Point, chem. min. of Nahant gabbro aureole, 79-2774; Narragansett basin, fossil plants, 79-805 (6); Norfolk basin, age based on plant 79-805 (7); megafossils, Pittsfield, Berkshire Museum, 79-4382; Walloomsac formation, highly aluminous hornblendes, 79-2797; Woods Hole, radionuclides in wet and dry deposition samples, 79-1468

-, MICHIGAN, Calumet, K-feldspar cement in Jacobsville sandstone, 79-1609 79-195; Keweenaw Co., domeykite, Marquette Range, apatite-bearing sedimentary rocks, 79-3539; Maybee, celestine and sulphur, 79-3119; Michigan basin, development, 79-987; Lr. Salina group evaporites, 79-4271; St. Clair Co., halite fossils in Niagaran reef, 79-760; White Pine

stratiform Cu deposit, 79-219

-, MINNESOTA, Gunflint iron-formation, min., petrol., 79-934

-, MISSOURI. polydymite, vaesite, siegenite, 79-2852; flint-clay facies, 79-2059; Decaturville, Cambro-Ordovician

fossil mud volcano, 79-69 (19)

-, MONTANA, clay minerals in soils from volcanic parent materials, 79-3311; SE, mercury vapour in soils, 79-2611; Helena, tactite, min. and petrol., 79-4287; Red Lodge, chromitite-bearing ultramafic complexes, 79-2158 (34); Stillwater complex, arsenopallodinite, 79-2855; differentiation of sulphides, 79-1733; Tobacco Root Mts., weathering products within feldspar microcracks, 79-4044; Wolf Creek area, rock and mineral resources, 79-3499

UNITED STATES OF AMERICA (contd.) , NEBRASKA, comp. of fluvial sands, 79-3014; framboidal pyrite in Cretaceous shark enterolith, 79-2846; Oligocene

coprolites, 79-3860

, NEVADA, dolomite formation in Cordilleran miogeocline, 79-1809; Carlin gold deposit, trace elements, geol., genesis, 79-3794; occurrence and formation of avicennite, 79-1627; weissbergite, new mineral, 79-1657; Carson Sink region, marble replacing gypsum, 79-491; Edna Mt. quadrangle, age and comp. of igneous rocks, 79-3183; Eldorado Mts., chem. of Tertiary volcanic rocks, 79-1739; Lander Co., Cooper Canyon Cu deposit, geol. and geochem. of skarn ore deposit, 79-3526; Majuba Hill, crystal structure of arthurite, 79-2139; Nye Co., Nevada Test Site, U in waters and aquifer rocks, 79-1471; Persha Co., Majuba Hill mine, parnauite and goudeyite, new minerals, 79-1653; Senator Mine, mercury ore, 79-1225; Timber Mt.-Oasis Valley caldera complex, volcanic suites and related cauldrons, 79-4229; Toquima Range, bedded baryte, 79-1391; Virginia City quadrangle, alteration and geochem. of Tertiary volcanic rocks, 79-

, NEW HAMPSHIRE, gravity models, emplacement of plutonic series, 79-805 (12); Black Mt., Clough formation, min., pet., O isotope geochem., 79-488; Great Bay estuary, minor elements in sediments, 79-1259; Mt. Moosilauke, metasomatism of Devonian brachiopods, 79-3874; White Mt. magma series, structural evolution, 79-805

, NEW JERSEY, relation of Watchung basalts to faulting in Newark graben, 79-1736; fluorapophyllite, 79-2822; biogeochem. of bog iron, 79-2608; Bound Brook, Chimney Rock quarry, natrolite and associated minerals, 79-3110; Franklin, marsturite, new mineral, 79-2883; red bands in willemite, 79-3068; clinohedrite, 79-2094; Franklin and Sterling Hill, onelocality minerals, 79-974; Paterson, mineral locality, 79-3109; minerals in Paterson Museum, 79-1911; Sterling Hill, kraisslite, new mineral, 79-1652; tilasite, 79-2839

-, NEW MEXICO, cements from Mississippian limestones, 79-897; magnetic polarity stratigraphy of chamita formation stratotype, 79-1968; Kilbourne Hole, spinel lherzolites, 79-1779; age of zircon from crustal xenolith, 79-3184; Lone Pine, rajite, new 79-2889; Picuris mineral, Range, chloritoid- and staurolite-bearing rocks, 79-1857; Rabb Canyon pegmatite, cryptoperthite intergrowth, 79-2116; Rio Grande rift, transient heat flow model, 79-957

-, NEW YORK, geol. map of State, 79-1683; mineral occurrences, 79-1900; Uppermost Clinton stratigraphy and petrol., 79-1806; SE, ages of Lr. Cambrian psammites and metapsammites, 79-1025; N, syndepostional brecciation in Potsdam sandstone, 79-3012; subsidence of continental margin, 79-1928; Adirondack Mts., amphibolites, 79-4323; structural framework and petrol., 79-1853; significance of metamorphic fluorite, 79-2301; Mt. Marcy area, orthoferrosilite and Fe-rich pyrox-

79-2785; central Appalachian Piedmont, U/Pb zircon dates, 79-1026; chronology of mountain building, 79-3178; Balmat, sphalerite geobarometry, 79-2851; magnesian rhodonite, 79-2795; Beaver Creek area, high-Ca marble, 79-3538; Benson mine, Fe in sillimanite, 79-3358; Cascade Mt., monticellite marble, 79-1854; De Kalb, elasticity of diopside, 79-4345; Jamica Bay, heavy-metal distribution, 79-2247; Lake Champlain, pollutants from paper plant, 79-1260; Long Island Sound, clay minerals as indicators of sediment source, 79-2063; <sup>210</sup>Pb balance, 79-2532; chronology and trace metal distribution, 79-3855; Monroe quadrangle, bedrock geol., 79-1685; North Country, rocks and routes, 79-1684; New York Bight, <sup>228</sup>Th/<sup>228</sup>Ra radioactive disequilibrium, 79-2533; Oneida Lake, ferromanganese nodules, 79-1433; Orange Co., Amity area, mineral occurrences, 79-3107; St. Regis quadrangle, bedrock geol., 79-1686

, NORTH CAROLINA, mineral collecting sites, 79-1901; chemically bimodal, calcalkaline suite of volcanic rocks, 79-4166; Deep R. basin, limestone and chert of playa origin, 79-1811; Gaston Co., matulaite, new mineral, 79-766; Kings Mt., Foote mine, minerals from, 79-982; Macon Co., Mincey mine, petrol. of dunite, 79-4215; Mitchell Co., biotite, 79-1114; Ore Knob mine, hydroxyapophyllite, 79-2822; Pamlico R. estuary, trace elements in sediments, 79-1429; Person Co., zoned apophyllite crystals, 79-693; eastern Piedmont, diabase dykes, 79-1742; Roxboro metagranite, petrol. and regional significance,

79-1858

, OHIO, SE, Sr in brines from petroleum fields, 79-2579; Clay Center, celestine, 79-1145; Dayton, mercury in soil, 79-1261; Licking Co., chert, 79-984; Meigs Creek coal, kaolinite in pyrite framboids, 79-1807

-, OREGON, E, petrogenesis of spilite and keratophyre, 79-1855; Baker Co., Durkee, chabazite in siliceous tuffs, 79-1618; Biggs Junction, origin of jasper, 79-399; Coast Range, petrochem. of Tertiary basalts, 79-4209; Columbia R. basalt, natural and artificial weathering, 79-1088; Klamath Mts., partial melting in Josephine peridotite, 79-2947; Obsidian Cliffs, osumilite, 79-1594; Sparta quartz diorite-trondhjemite complex, 79-3231 (19); Summit Rock, zircon, 79-3111

, PENNSYLVANIA, mineralogy, 1966-75, 79-976; rare earth minerals from, 79-981; museums and collections, 79-1912; Cornwall-type iron mines, 79-1196; effect of acid main drainage water on soils, 79-3315; Adams Co., native Cu and piemontite localities, 79-978; Backman iron mine, Hellerton, matulaite, new mineral, 79-765; Bedford Co., chert, 79-984; Cedar Hill quarry, desautelsite, 79-4115; Lehigh Gap, preferred orientation of mica, 79-3049; Lows Mine, Line Pit, chromian dravite, 79-659; Montgomery Co., Kibblehouse quarry, minerals from, 79-977; 79-745: Perkiomenville, cobaltite, Philadelphia, Ca zoning in almandine, 79-2758; Roaring Spring, New Enterprise quarry, minerals from, 79-980; South Mt. area, quartz pressure fringes, 79-3048; York Co., Kline's quarry, minerals from, 79-979

, RHODE ISLAND, W, mantle xenoliths, 79-3233 (V.1); Portsmouth, cross muscovite and cross charoite fibrous inter-

growths, 79-4033

-, SOUTH CAROLINA, volcanic evolution of southern slake belt, 79-873; Liberty Hill pegmatite, smoky quartz, 79-4388; Winnsboro, geochem. of composite dykes, 79-468

-, SOUTH DAKOTA, Black Hills, transported quartz grains from Harney Peak granite, 79-1966; Keystone, Hugo mine, černýite, 79-3405, 4114; Old Mike mine, wyllieite, 79-2876

TENNESSEE, creep and strain in sandstone, 79-3598; E, fluvial system affected by coal mining, 79-476; N, silicification history of former evaporite nodules, 79-4276; *Ducktown*, garnet zoning around massive sulphide deposits, 79-655; metamorphism of Burra Burra anticline, 79-4326; Elmwood mine, calcite and other minerals, 79-3119; Henry, Weakley, Carroll Counties, Wilcox and Claiborne formations, 79-4277

, TEXAS, carbonate nodules from Cambrian tidal inlet accumulation, 79-4273; "fried-egg" stalagmites, 79-1813; unstable clay-shales, 79-3295;  $\delta^{13}$ C food web anal. of sand dune community, 79-2449; E, heavy mineral anal, of Oueen City and Sparta formations, 79-1812; SW, ankerite cementation in subsurface Eocene, 79-2536; clay diagnesis in Wilcox sandstones, 79-3310; Austin, marine Cretaceous nepheline basanite volcano, 79-4216; Baffin Bay, sterols in sediments, 79-2549; Barringer Hill district, tveitite, 79-2872; rowlandite, 79-1591; Collin Co., storm-deposited arenites, 79-4272; Oxford, Llano Co., albrittonite, new mineral, 79-761; Palo Duro Canyon, petrog. of Pleistocene volcanic ash, 79-4231; San Antonia Bay, heavy metals in sediments, 79-1262; San Angelo formation, red-bed copper mineralization, 79-3506; Tarrant Co., Arlington area, clay mineralogy, 79-3312; Taylor Co., cementation of deltaic sandstone, 79-3015

, UTAH, stevensite oolites from Green R. formation, 79-123; extractable potassium in soils, 79-122; Duchesne Co., trioctahedral smectite, 79-3303; Green R. basin, ages of biotites from tuffs, 79-3182; Henry Mts., quartz diorite, 79-3653; Ivie Creek, aragonite shells, 79-3789; Moab quadrangle, U and V resources, 79-3502; San Rafael River mining area, geol. and U-V deposits, 79-3501; Thomas Mts., topaz and bixbyite, 79-3118; Unitah Co., abelsonite, new mineral, 79-1646; mineralogy of oil shales, 79-1299; geochem. study of petroleum formation, 79-2587; mineralogy of lacustrine lithofacies, 79-1810; Wah Wah Mts., red beryl, 79-3119

-, VERMONT, Belvidere Mt. area, asbestos-bearing ultramafic rocks, 79-3537; Chester, new biopyriboles, 79-1658, 2107; East Dover ultramafic bodies, olivine and 79-1852; Lake chrome-spinels in, Champlain, pollutants from paper plant, UNITED STATES OF AMERICA, VERMONT (contd.)

79-1260; Post Pond volcanics, sodium

trioctahedral mica, 79-4126

—, VIRGINIA, Middle Ordovician New Market limestone, 79-895; alluvial ilmenite placer deposits, 79-3497; Bedford Co., perrierite-bearing pegmatite, 79-1741; Centreville, apophyllite, 79-2822; Flint Hill gneiss, 79-4325; Kelly Bank mine, turquoise, 79-4385; Louisa Co., limonite after wood fossils, 79-4386

—, WASHINGTON, plutonism and orogeny, 79-4161; gravity and structure of active margin, 79-4408; Palaeozoic ophiolitic complexes, 79-32; Cascade Range, volcanic evolution, 79-71 (19); porphyry Cu deposits, 79-2203; Glacier Peak, compositional variability in tephra, 79-1767; Mt. Hood, amphiboles in andesite, 79-2389; Mt. Stuart batholith, clinoenstatite lamellae in enstatite, 79-664; King Co., quartz and pyrite, 79-3106, 3119; Mt. Ranier, Jurassic metamorphism of basement gneisses, 79-31; North Fork, porphyry Cu deposit, 79-1224; Skagit gneiss migmatites, 79-1851; Twin Sisters dunite, 79-1850

—, WISCONSIN, Precambrian rhyolites and granites, 79-1734; geochem. and evolution of Wolf River batholith, 79-1735

-, WYOMING, mapping iron formation in Precambrian, 79-3200; kimberlite pipe, 79-855; Na- and Mg-montmorillonite, 79-2044; montmorillonite-dimethyl sulphoxide complexes, 79-2048; Oligocene coprolites, 79-3860; bentonite, Al-interlayered, 79-3283; S, IR detection of kimberlitic diatremes, 79-4211; megacryst assemblages in kimberlite, 79-3233 (III.1); E, comp. of fluvial sands, 79-3014; NW, diagenesis and fabric in calcite ooids, 79-3013; Albany Co., diamond in kimberlite diatremes, 79-3541; Bighorn Mts., Archaean trondhjemites, 79-3231 (12); Precambrian gneiss fabric, 79-4164; mafic dykes of Clear Creek drainage area, 79-4210; Granite Mts., geol. and geochron. of Precambrian, 79-3179; Laramie anorthosite complex, field relations and gravity interpretation, 79-4163; Libbey Creek area, radiocarbon dates of carbonates from soils, 79-3181; Lincoln Co., Salt R. Range, petrog. and structural fabric, 79-4274; Powder River basin, roll-front uranium deposits, magnetic prospecting, 79-3498; Preacher Creek ultramafic intrusion, age and Sr isotope ratios, 79-3180; geol. of Sage Creek nephrite deposit, 79-4288; Silver Crown mining dist., geol. and mineral deposits, 79-4162; Teton Hole and Jackson Hole, Pliocene Conant Creek tuff, 79-4228; Washakie Basin, ages of biotites, from tuffs, 79-3182; Wyodak coal seam, trace element distribution, 79-3859; Yellowstone National Park, phosphorus in hydrothermal waters, 79-3886; He isotopes in volcanic gases, 79-2570; Upper Geyser Basin, hydrothermal alteration and selfsealing in drill holes, 79-864, 4227

Univariant equilibria, experimental determination, 79-1267; detn. using divariant solid-solution assemblages, 79-3585

Uralolite, Maine, anal., opt., 79-2870

Uraniferous minerals, identification, 79-1060 (B.2)

Uraninite, 79-1370; replacement by kerite and coffinite, 79-1384; Norway, 79-823; Canada, 79-233; Saskatchewan, 79-1060 (E.2)

Uranium, bibliography, 79-220; supply and demand, international symposium, 79-2016; geochem. prospecting, 79-497; identification in rocks by autoradiography, 79-1476; distribution in crystalline rocks, 79-1478; high-temp. geochem., 79-1060 (A.3); mobility and concentration in surficial environments, 79-1060 (A.2, D.5); exchange during low-temp. alteration of oceanic basalt, 79-2474; accumulation in natural layer aluminosilicates, 79-2463; diffusion in diopside and fluorapatite, 79-277; partitioning in Di-Ab-An system, 79-287; in diopside-melt and whitlockitemelt systems, 79-288; solution-mineral equilibria, 79-1060 (A.1), 1295; in metamorphic rocks, 79-482; in phosphate rock, 79-3795; in black shales, 79-1060 (D.2); in Phanerozoic sandstone and volcanic rocks, 79-1060 (D.1); nuclides in ferromanganese nodules, 79-424; microdistribution in stony meteorites, 79-2736; Norway, in granites, 79-449; concentrations in British granites, 79-1148; Orkney, in Old Red Sandstone, 79-3465; Italy, in pyroclastic rocks, 79-3809; in Siberian platform igneous rocks, anal., 79-1405; Greece, behaviour during rodingitization, 79-1447; India, abundance in Deccan basalts, 79-2486; South Australia, in Tertiary stream channels, 79-1188; New Zealand, in soils, 79-2599; Canada, in Precambrian basement, 79-3873; British Columbia, in alkaline waters, 79-1484; Nova Scotia, 79-433; Nevada, in waters and aquifer rocks, 79-1471

--- bearing materials, variability of disequilibrium and emanation factor, 79-1480

- dating, open system, 79-1967

deposits, mineralogy and origin, book, 79-1060; U-Th symposium, 79-3446; geol. setting of Beaverlodge-type, 79-1060 (E.3); stratiform deposits in sandstone, conglomerate, pyroclastic rocks, 79-1060 (D.4); Europe and eastern North America, Phanerozoic, 79-1060 (C.3); France, distribution in granitic bodies, 79-1173; Portugal, development of mining industry, 79-3470; China, 79-1181, 1659; Australia, 79-1060 (C.2); Canada, genetic aspects and classification, 79-1060 (C.1); location using lake sediments and waters, 79-1481; British Columbia, genesis of uranium-fluorite deposits, 79-234; Ontario, 79-1060 (C.4); mineralogy and setting, 79-1060 (D.3); Saskatchewan, 79-1060 (E.1); unconformity-type, 79-1060 (E.4-6); Wyoming, magnetic prospecting, 79-3498; Utah, U-V deposits, 79-3501, 3502

— mineralization, in shallow intrusive environments, 79-1060 (C.5); Queensland, 79-1216; Saskatchewan, 79-1060 (E.2)

— ore, processing technology, 79-2016; C isotope fractionation in associated organic matter, 79-2464 Uranophane, Norway, 79-823; Switzerland, 79-1890

Uranothorite, Canada, 79-233

Vaesite, Missouri, anal., 79-2852

Vanadium, Scotland, in podzols, 79-2055

--- compounds, defect structures in V<sub>2</sub>O<sub>5</sub>, 79-3400

--- deposits, *Utah*, 79-3501, 3052

Variscite, Germany, 79-758, 1642; Virginia, 79-4385

Vaterite, Germany, 79-3089

Veatchite-A, *Turkey*, new modification, anal ↓ opt., X-ray, 79-4125

Velocity anomalies in dilatent rock, 79-276; delineation of anomalous zones, 79-1874

VENEZUELA, laterites, 79-1993; Isla de Margarita, garnet zoning in eclogitic rocks, 79-2760

VENUS, panoramas of surface, 79-3974; geol. anal. of radar images, 79-617; geochem. studies by automatic interplanetary stations, 79-3975; atmospheric banding, 79-3125

Vermiculite, XRD identification, 79-82; classification and identification of polytypes, 79-3349 (6); layer stacking types, 79-1076; props. of interstratified micavermiculite, 79-95, 96; dynamics of interlamellar water, 79-2014 (2.3); reaction of ammonia with, 79-1080; reaction of cationic dyes on, 79-2043; effect of texture on structure, 79-2014 (1.3); acid-leached, Rb/Sr systematics, 79-2032; France, 79-2163; Russian SFSR, 79-901; Japan, interstratified chlorite-vermiculite, 79-2014 (1.8)

Verneuil-method, early stages, 79-389

Vesuvianite v, iodocrase

Vibrocorer, use in geol. exploration, 79-3189 VIETNAM, N, bauxite deposits, 79-1179 Vine-Matthews hypothesis, direct test, 79-986 Virgilite, *Peru*, new mineral, chem., X-ray, 79-769

Viscometer, high-P, for temps. up to 300°C, 79-2279

Visual optics for identifying gemstones, 79-2443

Vitrinite, distinction using ESR diagram, 79-1043; reflectance measurement, 79-43 Vivianite, Switzerland, late sediments, 79-

2513 Vladimirite, *Morocco*, 79-3099

Volcanic activity, assessing risk, 79-2956; island-arc volcanism, 79-4244; northern Britain, Carboniferous volcanism, 79-1056 (4.1); Italy, earthquakes and tremors in active volcanoes, 79-69 (3); role of water in eruption, 79-1752; Mt. Etna, anal. of hazard, 79-2955; Greece/Bulgaria, post-Pliocene, 79-69 (5); Mediterranean, explosive activity over past 200 000 yr, 79-1755; Cyprus, 79-69 (13); comparison of Santorini and Krakatau, 79-69 (6); Iran, Miocene, 79-1714; Japan, petrol. of Kannabe volcano group, 79-859; New Zealand, eruption of Ruapehu, 79-1762; Alaska, St. Augustine volcano, nuée ardente, 79-1765; Guadeloupe, prediction at Soufrière, 79-2957; Ecuador, Cretaceous to Eocene volcanic arc activity, 79-2958; Salvador, Boqueron volcano, magmatic variation, Volcanic activity (contd.)

arcs, ancient, identification criteria, 79-

ash, south Pacific, stratigraphy, 79-3850; Fiji plateau, comp. variations, 79-863; Texas, petrog., 79-4231

columns, control of heights by eruptive energetics and dynamics, 79-1747

complex, South Australia, geol. history, 79-1959

glass, partitioning of Pb with feldspars, 79-2500; Oceania, geographical distribution and characterization, 79-862

rocks, classification and nomenclature, 79-2913, 2914; extraction and anal. of gases, 79-3214; tungsten abundances, 79-2473; uranium in, 79-1060 (D.1); implications of Ti, Zr, Y, Nb variations, 79-3802; separation by structural-chem. characteristics, 79-1745; Nd and Sr isotope evidence for crustal contamination, 79-2476; alkali-, petrogen., 79-1728; Krich, water-undersaturated melting experiments, 79-3654; Iceland, O isotope geochem., 79-445; Ireland, geochem. and tectonic setting, 79-2919; French Massif Central, magma/xenolith relationships, 79-830; Italy, origin from experimental and thermodynamic evidence, 79-69 (4); Ukraine, geochem. of trace elements, 79-3811; Greece, 79-1756; Aegean Sea, 79-69 (15); Ethiopia, melting studies, 79-3647; Iran, shoshonitic volcanism, 79-4196; India, geochem. and geotectonic implications, 79-2907; central Asia, petrol. and geochem., 79-2934; Pacific Ocean, Sr isotope features, 79-2982; volatiles in, 79-3820; Hawaii, Ge-Si and Ga-Al fractionation, 79-1410; Japan, evolution on island arc, 79-462; petrol. studies, 79-2939; of Okanaro group, 79-930; New South Wales, stratigraphy, 79-1759; Queensland, 79-1758; K/Ar ages, 79-17; South Australia, 79-1844; New Zealand, distribution, petrog., chem., 79-1729; Antarctica, geol.. 79-860; New Brunswick, geochem., 79-1412; Newfoundland, geol. and geochem., 79-4207; Northwest Territories, geochem. and origin, 79-2496; Saskatchewan, drillhole geochem. data, 79-1482; Alaska, correlation with ultramafic rocks, 79-851; California, island-arc, reconnaissance geochem., 79-3231 (18); Gulf of California, trace element and Sr isotope characteristics, 79-3833; Nevada, alteration and geochem., 79-3832; Tertiary, chem., 79-1739; North Carolina, chemically biomodal, calc-alkalic suite, 79-4166; central Andes, Upper Cainozoic volcanism, 79-1031

Volcanoes, geol. aspects of eruption prediction, 79-2952; monitoring and prediction, 79-2953; IR techniques, 79-2954; in neovolcanic zones of Iceland, 79-1056 (5.1); Russian SFSR, geochem. bias of basalt from, 79-2963; SE Australia, geochem. comparison, 79-463; Alaska, mud-, gases in 79-2597; California, geochem., 79-

3835

Vuagnatite, Japan, anal., opt., X-ray, 79-4027 Vysotskite, Ontario, chem., X-ray, 79-1632

Wagnerite, Colorado, mineralogy and geol. of occurrence, 79-4384 WALES, Wolfson Geochem. Atlas, 79-68; S, ages of Late Precambrian igneous rocks, 79-1005

-, DYFED, fluvial pisolites and laminated crystalline crusts, 79-4256; Cennen Valley, stratigraphy of Silurian and Old Red Sandstone, 79-2995; NW Pembrokeshire, distribution of chem. elements in soils, 79-2254

GWYNEDD, Anglesey, age of Precambrian rocks, 79-1944; Mona complex, 79-4137; age of metamorphism and magmatism, 79-3154; Bryn-teg borehole, 79-1663; Harlech mineralized breccia pipe, 79-2173

Warwickite, China, crystal structure, 79-1141;

New York, 79-3107

Wavellite, USSR, mineralogy and genesis, chem., opt., X-ray, 79-4109; Alabama,

79-3117; Virginia, 79-4385

Water, detn. in geochem. standards, 79-2636, 2639; detn. in silicates using elemental analyser, 79-1047; on particle surfaces, 79-1059 (6); heat capacity under high-P near solidification point, 79-250; thermal conductivity of nine solid phases, 79-2335; H<sub>2</sub>O-CO<sub>2</sub> two-phase mixture, P-T curves, 79-2283;  $HCl-H_2O$  mixtures, P-V-Trelations, 79-2289; natural systems, mass transfer and C isotope evolution, 79-2590; solubility in forsterite melt, 79-280; in plagioclase melts, 79-3630; polymorphism and role in hydrothermal mineral formation, 79-251; water and magmas, Gibbs-Duhem equation, 79-3627; solubility in granitic melts, 79-3631; role in quartz deformation, 79-3749; mobility in crystalline upper mantle, 79-3588; in lower crust, 79-1877; depth as control on submarine exhalative ore deposits, 79-2155; pH, CO<sub>2</sub> pressure, alkalinity, Ca concentration, 79-3887; in glassy rims of pillow basalts, 79-1409; oilfield-, geochem., 79-2583; effect of disposal operations in estuaries and coastal ocean, 79-71 (7); effect on planetary mantles, 79-2284; Scotland, anoxic pore waters from sediments, 79-1455; The Wash, storage scheme, 79-4255; Northern Ireland, well-, anal., 79-492; USSR, chem. and isotopic comp., 79-2593; *Iraq*, from Cretaceous and Tertiary formations, hydrogeochem., 79-2582; flow direction in Zubair reservoir, 79-2581; Japan, variations in Quaternary magmas, 79-4200; Australia, storage structures in arid regions, 79-1470; New Zealand, radon in artesian waters, 79-2261; British Columbia, alkaline, uranium in, 79-1484; Kentucky, cave-, stable isotope geochem., 79-422

, estuarine, flocculation of dissolved Fe, Mn, Al, Cu, Ni, Co, Cd during mixing, 79-1454

-, fresh, nature of metal-sediment-water interaction, 79-1458; chem. modelling of trace metals in, 79-2596

-, geothermal, cation buffering, 79-1469; France, dissolved alkaline earth ions, 79-1461; dissolved Al in, 79-2585; *Italy*, sources and circulation paths, 79-2569; ammonium content, 79-3884; *Ethiopia*, 79-3885; New Zealand, transport of rock constituents, 79-2568; Wyoming, phosphorus in, 79-3886; Chile, isotopic comp., 79-2574

-, ground, effect of CO<sub>2</sub> outgassing, 79-2588; oxidation-reduction sequences, 79-

2594; source of nitrate in, 79-3891; Yorkshire, from chalk, carbonate chem., 79-2576; India, quality in weathered Deccan basalt, 79-1466; Alaska, As in, 79-2606; Barbados, variation in geometry and chem., 79-1472; Arizona, recharge with sewage effluent, 79-70 (7)

interstitial, from DSDP sites, Sr isotopic comp., 79-494; influence on brittle failure of Pennant sandstone, 79-3590; British Columbia, chem. in sediments, 79-2592

-, lacustrine, *India*, geochem., 79-1467; *Canada*, location of uranium deposits, 79-1481; Maine, metal-binding capacity,

-, natural, detn. of mononuclear dissolved Al, 79-1996; reversible control of aqueous aluminium and silica, 79-2307

river, SE USA, arsenic concentrations, 79-2244

-, sea, Ra, Th, Ac extraction, 79-3880; orthophosphate uptake on calcite and aragonite, 79-2365; trace metal geochem. cycles in wastewater discharge, 79-2241; suspended Cu, Zn, Pb minerals in, 79-2240; measurement of mercury in, 79-2251; effect on iron formations and RE patterns, 79-2448; hydrothermal alteration of basalt, 79-2308; artificial, association of hydrocarbons with clay particles in, 79-1244; Black Sea, stenols and stanols in, 79-3890

, stream, Devon, radon in, 79-1460

Websterites, garnet-, origin and evolution, 79-299

Wehrlite, chem., X-ray study, 79-4099

Weissbergite, Nevada, new mineral, chem., opt., X-ray, 79-1657

Westerveldite, Greenland, 79-2849

WEST INDIES, Bahamas, Andros I., formation of oolites, 79-4279; Eleuthera Bank, generation of Recent oolitic hardgrounds, 79-4278; Barbados, diagenesis of lime mud, 79-3017; variation in geometry and chem. of freshwater phreatic lens, 79-1472; Cayman Trough spreading centre, evidence for existence, 79-4412; Greater Antilles island arc, evolution of intrusive rocks, 79-4247; Guadeloupe, ophiolites, 79-2987; eruption frequency of Soufrière, 79-2957; Jamaica, dickite, ordered and disordered varieties, 79-1087; chert-chalk diagnesis, 79-4280; Jamaica and Haiti, Late Cretaceous granodiorites, 79-3836; Lesser Antilles, dacite, 79-3231 (21); La Désirade I., ophiolitic rocks, 79-34

Whiteite, Brazil, new mineral, anal., opt.,

X-ray, 79-770

Whitlockite, U and Th partitioning, 79-288; Pu-U-Th paritioning, 79-286; meteoritic, spallation recoil tracks, 79-628; lunar,

Whitmoreite, Germany, 79-4373

Wickmanite, USSR, minerals in series with schoenfliesite, 79-4088

Willemite, crystal structure, 79-2093; New Jersey, hematite bands in, 79-3068

Wittichenite, Cumbria, 79-2207; anal., opt.,

X-ray, 79-2853 Wodginite, Western Australia, 79-3101; Brazil, epitaxial with cassiterite, 79-2833

Wöhlerite, Portugal, 79-831 Wolfeite, Germany, 79-2869

Wolframite, overgrowths on cassiterite, 79-131: hübnerite-ferberite distribution in wolWolframite (contd.)

79-2341; Cornwall, framite deposits, hübnerite-ferberite ratio not a geothermo-79-732; Portugal, 79-3469: hübnerite-ferberite zonal distribution, 79-1070 (IV.1); Poland, ferberite, chem., 79-453; Rhodesia, hydrothermal behaviour of W in wolframite deposit, 79-2158 (8); New Brunswick, 79-1222

Wollastonite, 79-152, 356; experimentally deformed, polytype transformations, 79-2387; Russian SFSR, 79-901, 902; Japan, 79-2794; South Australia, 79-2227

Wulfenite, hemihedral forms related to structure and growth, 79-3349 (59); France, 79-1199

Wurtzite, stability, 79-1320

Wüstite, electronic structure, 79-3395

-, magnesio-, phase relations, 79-2337; optical absorption and electrical conductivity, 79-318; as O<sub>2</sub> calibration in solid-media experiments, 79-3567

Wyllieite, nomenclature of group, 79-2876

Xanthoxenite, new X-ray data, 79-770 Xenon, in CO, well gas, 79-2572

Xenotime, Austria, 79-1897; Switzerland, 79-1893, 4376, 4379; Czechoslovakia, 79-

Xingzhongite, China, new material, 79-1645 Xonotlite, 79-356

X-ray analysis, of high-volume filter samples, 79-3546

- diffraction, topography, growth history of crystals, 79-3342; absorption correction factor for cylindrical sample, 79-1984; low-temp., book, 79-1067; sample packer for randomly oriented powders, 79-44; using diamond-anvil cells, 79-2277; 2278; iron oxides in soil clays, 79-3320; detn. of F in montebrasite, 79-1983; carbonate apatites, 79-1326; Oligocene coprolites, 79-3860; identification of clays in thin section, 79-79; soil kaolinite, vermiculite, chlorite identification, 79-82; anal. of mudsandy rocks, 79-3196; humic acids, 79-
- diffractometry, auto automatic four-circle
- -powder diffraction, camera for low temps., 79-1038; rock-forming minerals, 2768; detn. of feldspars in mudrocks, 79-1981; key lines of clay minerals, 79-78

-fluorescence analysis, geochem, reference samples, 79-2619; detn. of Ni and Ga, 79-1052; anode sludges, 79-52; anal. of Oligocene coprolites, 79-3860

- microanalysis, Ottawa R., Hg in sedi-

ments, 79-3548

optics, 79-45

- photoelectron spectroscopy, application to mineral surface chem., 79-2014 (2.6); to mineralogy and geochem., 79-3224; copper minerals, 79-2858; V-bearing aegirines, 79-2790; sillimanite, 79-144; study of lunar surface alteration profiles, 79-3967
- spectrometric analysis, book, 79-1055 spectroscopy, applications to oceano-

graphy, 79-2013 (1.6); ferrous silicates, 79-139

Yanzhongite, China, new mineral, 79-1645 Yixunite, China, new mineral, 79-1645

Yoderite, Tanzania, optical absorption and Mössbauer spectra, 79-1590

Yttrium, in soil and stream sediment sequence, 79-2607; Scotland, in water lily, 79-1248 Yttrotitanite, Norway, 79-823

Yugawaralite, Sardinia, anal., opt., X-ray,

- 79-2830; India, anal., opt., X-ray, 79-2829 YUGOSLAVIA, exploitation of bauxite, 79-2007 (14); W-Mo deposits, 79-1070 (I.4); Cainozoic volcanic rocks, 79-69 (14): Bosnia, mineral raw materials, 79-3453; hyalophane, 79-163; Dalmatia, bauxite deposits, 79-2007 (7); E Macedonia, central Bosnia, baryte, 79-949; Madjan Pek ore deposit, 79-2458; Montenegro, bauxite geol., 79-2007 (10); Nikšić, bauxites, 79-2007 (16); Radovan Mt., low-Mn iron ores, 79-3477; Stari Trg Pb-Zn deposit, sphalerite from, 79-2462; Trepča, sphalerite, 79-3606
- ZAÏRE, metamorphic rocks and ore deposits, 79-2905; Katanga, Shinkolobwe deposit, Co-bearing sulphide assemblages, 79-4094; Lueshe carbonatite, kalipyrochlore, 79-1650
- ZAMBIA, mineral guide, 79-2011; Copperbelt, Chingola, cupriferous micas, 79-690; Eastern Provinces, minerals in borosilicate rock, 79-2780; Luapula Province, age detn. in Bangweulu block, 79-3158; Mufulira mine, greywackes and associated sulphides, 79-2209; Rokana mine, libethenite, 79-3100; Samba, deformed porphyry-type copper deposit, 79-1207

Zektzerite, synthesis and props., 79-2388

- Zeolites, chemistry, Q mode multivariate factor anal., 79-4060; transition metal adsorption of N2 and H2O, 79-2424; Na X-zeolite, crystal structure and Na+-Nd3+ ion exchange, 79-3349 (41); crystal stability 79-379; synthetic, NiA zeolites, exchangeable cations and thermal dehydration, 79-3754; European sedimentary occurrences, 79-1620; Iceland, 79-1880; Kent, in Thanet Beds, 79-4219; France, in Cenomanian littoral deposits, 79-4061; Germany, in Oligocene bituminous shale, 79-1818; in altered glasses from Ries meteorite crater, 79-1581; Italy, IR study, 79-4064; Japan, anal., 79-706; Taiwan, zeolite-facies metamorphism of basaltic rocks, 79-4318; New Zealand, in metamorphosed basalts, 79-1821
- -, analcite, 79-2418; synthesis from natural - zeolites, perlites, expanded perlite, 79-376; crystallization from aqueous solutions, 79-3753; from various localities, structure comparison, 79-169; thermal expansion and inversions, 79-2422; Portugal, 79-831; India, with blebs and wires of native Cu, 79-705; British Columbia, in shackanite-related 79-1710; lavas, Colorado and Utah, 79-1810; Brazil, 79-1902
- , chabazite, structural classification, 79-1115; Japan, anal., 79-4063; Oregon, in siliceous tuffs of Pliocene lacustrine deposit, 79-1618
- , clinoptilolite, USSR, in volcanic tuff, 79-2828; Japan, California, K atom distribution and thermal stability, 79-172; New Zealand, pseudomorphs after Miocene fos-

sils, anal., opt., X-ray, 79-709; Utah, source of extractable potassium, 79-122

, epistilbite, stability and zeolite facies, 79-3755

- -, erionite, Japan, dehydration, chem., Xray, 79-170
- -, ferrierite, New South Wales, anal., 79-710 -, gismondine, structural classification, 79-1115
- -, gmelinitè, crystal chem., 79-707; structural classification, 79-1115
- -, harmotome, structural classification, 79-
- -, heulandite, etch patterns on cleavage surfaces, 79-3071; thermal behaviour, 79-377; Italy, spectroscopic study of iron in, 79-1619; *Poland*, sorption props., 79-4352

- laumonitite, New Zealand, 79-1672

, levyne, Japan, anal., X-ray, opt., 79-4063 -, merlinoite, crystal structure, 79-1115, 2121; synthesis, 79-3756

-, mesolite, Brazil, 79-1902

-, mordenite, cation-exchanged, thermogravimetry and microstructure, 79-2425;

Japan, X-ray, 79-116 -, natrolite, 79-2418; Portugal, 79-831; Germany, 79-4374; New Jersey, paragenesis, 79-3110

-, offretite, 79-170

-, phillipsite, 79-2418; structural classification, 79-1115; high-temp. X-ray study, 79-378; goniometry, 79-1036; inside manganese nodules, 79-1630

-, pollucite, thermal expansion and inversions, 79-2422; Manitoba, 79-4059

-, ptilolite, New Zealand, 79-1672

-, scolecite, Brazil, 79-1902

-, stellerite, crystal chem., 79-708

-, stilbite, crystal chem., 79-708; thermal behaviour, 79-377

thomsonite, 79-2418; habits, crystal forms, comp., 79-4062; Japan, chem., 79-711

, wairakite, New Zealand, 79-1672

Zeolite-bearing rocks, USSR, quantitative thermogravimetry, 79-1040; Cuba, 79-935 Zeunerite, France, 79-1887

Zinc, recovery as zinc sulphate from zinc ore, 79-2166; reactions with dickite, 79-2030; in staurolite, 79-2773; in soil fractions, 79-3325; stability in acid and calcareous soils, 79-3326

- -minerals and compounds, suspended in ocean waters, 79-2240; sulphides, leaching in acidic solutions containing ferric sulphate, 79-332; effect of copper on structure, 79-3349 (62); high-pressure polymorphism, 79-3349 (67); study of high-pressure phase, 79-3349 (68); ZnO, thermal expansion, 79-951; Zn-Li silicates, structures and phase transformations, 79-2095; Red Sea, amorphous sulphides in metalliferous sediments, 79-2191
- deposits, worldwide comparison of Cu, Zn abundances, 79-3444: South Africa, 79-2158 (16); Canada, Pb-Zn deposits, structural framework, 79-3491; Newfoundland, related to diagenesis and intra-karstic sedimentation, 79-236

mining, Arkansas, history, 79-4387

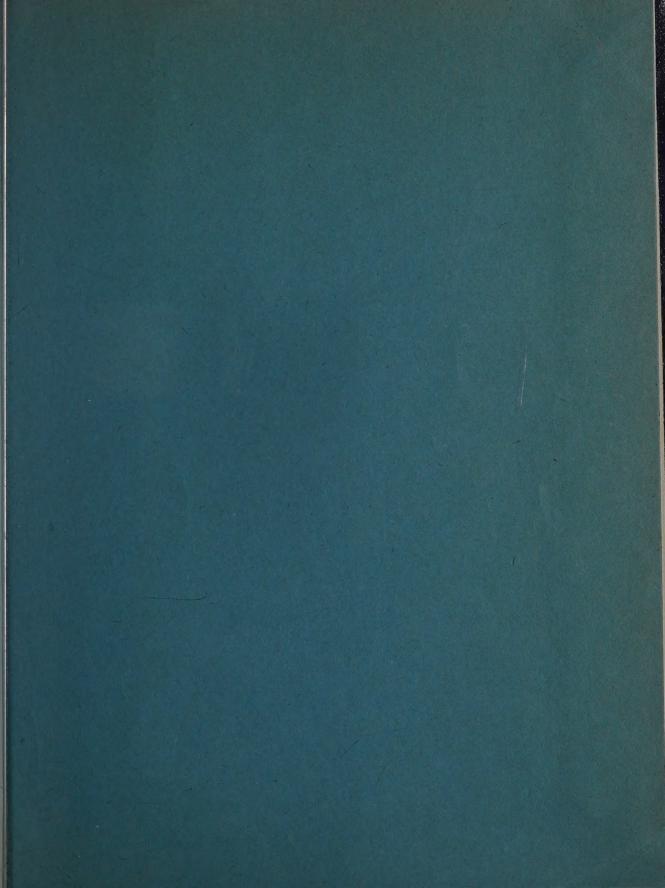
Zircon, 79-1370; opt., 79-4329; structural stability, 79-1586; crystal chem., 79-3341; synthetic, morphology, 79-3694; crystal structure and compressibility at high P,

Zircon (contd.)

79-3353; anomalous Pb isotopic comp., 79-5; overgrowths on cassiterite, 79-131; Norway, 79-823; morphology and U/Pb ages, 79-3147; Sweden, morphology, 79-4006; Scotland, U/Pb age detn., 79-3150, 3151; South Wales, age data for Late Precambrian igneous rocks, 79-1005; Germany, in eclogites, U/Pb dating, 79-1949; Switzerland, 79-4376, 4378; Russian SFSR, ages from mantle, 79-4149; Bulgaria, Zr/Hf ratios, 79-651; Saudi

Arabia, evaluation of isotopic dating method, 79-3164; India, thermoluminescence glow curve and spectrum, 79-947; Queensland and New South Wales, in gem gravels, 79-2429; Greenland, U/Pb study, 79-7; Labrador, ages in adamellite, 79-24; in gneisses, U-Th-Pb ages, 79-3172, 3173; Ontario, effect of regional metamorphism on U/Pb dating, 79-22, 23; New Mexico, from crustal xenolith, age detn., 79-3184; Oregon, 79-3111; Virginia, 79-1741; Brazil, 79-3119

Zirconia, 79-1361; cubic stabilized ZrO<sub>2</sub>, chem., opt., X-ray, 79-1351, 2441, 3770; ZrO<sub>2-x</sub>, lower phase boundary, 79-320; compatibility relationships, 79-3742; pseudobinary TiO-ZrO<sub>2</sub>, 79-1312
Zirconium, partition coefficients, 79-1287; in zircons, 79-651; in soil and stream sediment sequences, 79-2607
Zinnwaldite v. mica
Zippeite, Switzerland, 79-1890
Zoisite v. epidote
Zussmanite, crystal structure, 79-3382



## Mineralogical Abstracts

The Mineralogical Society of Great Britain and the Mineralogical Society of America are the joint publishers. The periodical can be obtained directly from the Publications Manager, Mineralogical Society, 41 Queen's Gate, London, SW7 5HR, or through any bookseller.

Annual Subscription for one calendar year of four issues and the index number, post free: U.S. \$75 or £30.00.

Back Numbers: volumes 1-13 of Mineralogical Abstracts were issued only with the Mineralogical Magazine (volumes 19-31) and are not available separately. With the exception of a few which are out of print, back numbers of the Magazine containing Abstracts are available at U.S. \$4.40 or £1.75 per number. Volumes 14-27 of Mineralogical Abstracts are available separately at U.S. \$5.00 or £2.00 per number. Volume 28 onwards is available at U.S. \$20.00 or £8.00 per number.

Members and Fellows of the Mineralogical Society of America and Members of the Mineralogical Society of Great Britain may purchase the four numbers for any year from 1959–1977 for their personal use at U.S. \$10.00 or £4.00, and for 1978 onwards at U.S. \$15.00 or £6.00. This special rate does not apply to single numbers.